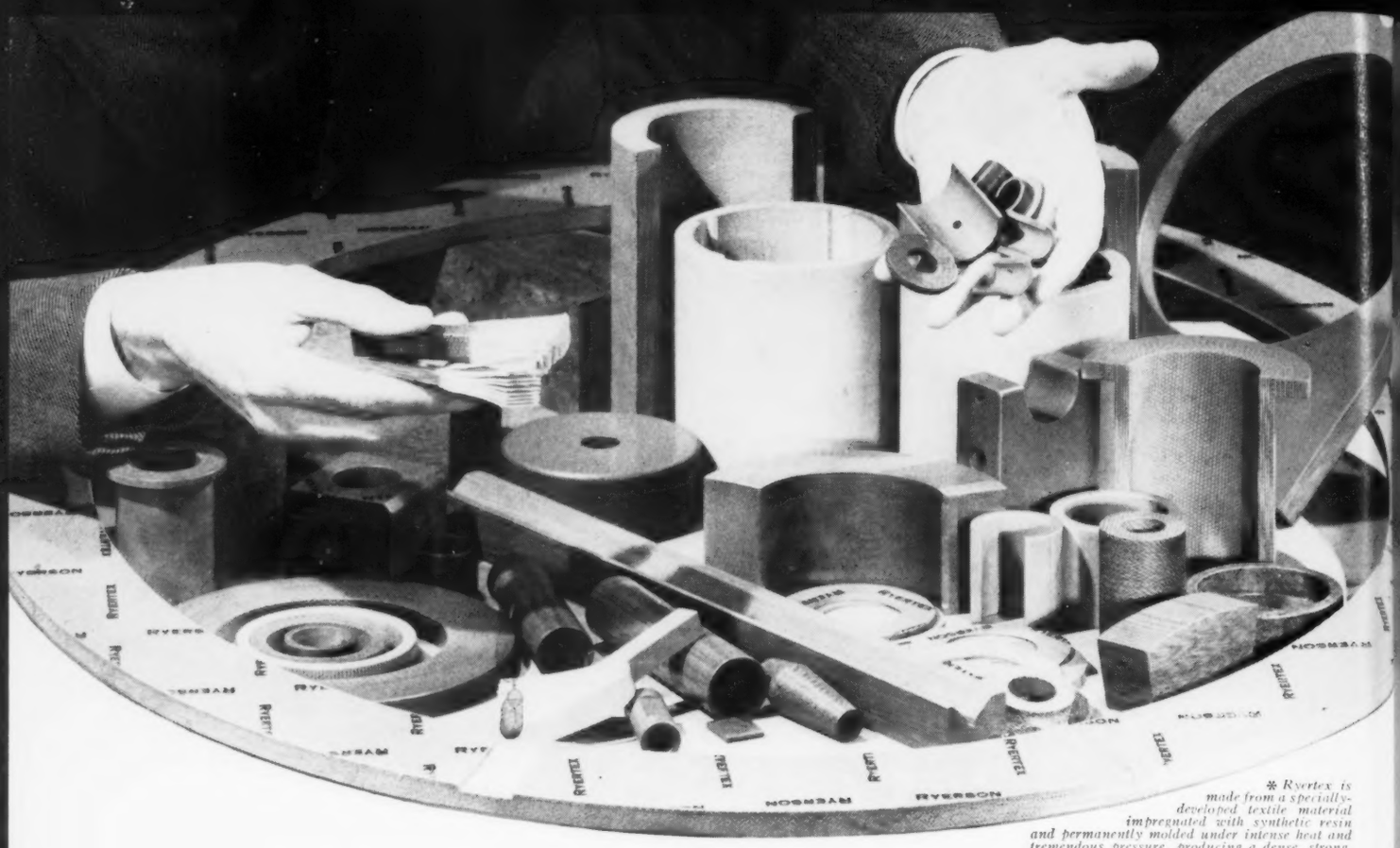
Textile World

JULY, 1942

XTILE PLANT PROTECTION SEE SPECIAL SECTION



* *Ryertex is made from a specially-developed textile material impregnated with synthetic resin and permanently molded under intense heat and tremendous pressure, producing a dense, strong, hard-surfaced bearing that has proven capable of withstanding very heavy continuous loads. It is manufactured exclusively for Joseph T. Ryerson & Son, Inc., by the Continental Diamond Fibre Co.*

Ryertex* *Non-Metallic* Bearings Now Replace Babbitt and Bronze

Save Strategic Metals — Easy to Install

Switch your machines to Ryertex Composition Bearings and forget bearing worries for the duration . . . and *after!*

It's *easier* to get Ryertex. *Smart engineering* to use this better bearing material. And *common sense* to avoid draining scarce stocks of brass, babbitt and bronze now that Ryertex is available. That's why many industries are quickly changing to this superior, non-metallic bearing.

Fortunately, Ryertex won its spurs as a superior bearing material years ago. Now, proof-tested and with enviable performance records, Ryertex is ready to go to work for you.

Ease of installation and very moderate cost are only *two* reasons why you should consider Ryertex. Challenging all production and maintenance engineers are these additional reasons.

Ryertex has a lower frictional coefficient than bronze or babbitt . . . .

. . . . . can carry greater loads—
. . . . . is longer wearing—
. . . . . harder (Scleroscope Test)—
. . . . . corrosion resistant—
. . . . . lighter—
. . . . . uses oil, grease or water lubrication—
. . . . . conserves hard-to-get metals—
. . . . . saves power, downtime, and results in a better product.

Send us your inquiry and specifications for prompt action.

Joseph T. Ryerson & Son, Inc., Chicago, Jersey City.

PHYSICAL PROPERTIES

Specific Gravity	1.37
Weight per Cu. In. Oz.	0.8
Modulus of Elasticity, psi	1,500,000
Tensile Strength with grain, psi	9,400
Tensile Strength across grain, psi	7,000
Compressive Strength, Flat, psi	37,500
Compressive Strength, Edge, psi	25,000
Bending Strength, psi	18,000
Water Absorption in 100 hrs.	1.07%
Scleroscope Hardness	75
Max. Operating Temp. Deg. F.	275
Thermal Coeff. Expansion	30 x 10^{-6}
Dry Coeff. of Friction	0.280
Permanent Set per 1" thickness under load of 1000 psi	.002

RYERTEX *non-Metallic* BEARINGS

R v.92² July - Dec. 1942

Your Mill is busy—busier than for many years. It is on an essential job. Our country's soldiers need its output.

You are probably running 3 Shifts—with 3 sets of Loomfixers. That's Tough on Your Looms.

Perhaps as many as One-third of your fixers are Green Hands. That's Tougher.

Unless you are better off than some of your neighbors, you are suffering from a Serious Let-down in Your Loomfixing.

You Use Any but Draper Parts

When Loomfixing
Suffers from 3 Shift Operation
It's a Bad Time for Using Mongrel Repair Parts

This is Not the Time to Take Chances

We Stand Behind Our Looms

But—Our Responsibility Ceases When

With Inferior Loom Repair Parts—parts someone tells you are "just as good."

They can't be—and because they are not, they Bedevil your Loomfixing.

Draper Repair Parts fit in where the broken or worn parts are taken out—without readjustment or fixing. They are just like the parts that came on your looms—made from the same blueprints, by accurate machine-molding—and finished on the same precision jigs and fixtures.

DRAPER CORPORATION

TEXTILE WORLD, Vol. 92, No. 7, July, 1942. Published monthly by McGRAW-HILL PUBLISHING CO., INC., (Bragdon, Lord & Nagle Division). Publication Office, 99-129 North Broadway, Albany, N. Y. Editorial and Executive Offices, 330 West 42nd Street, New York, N. Y. Allow at least ten days for change of address. All communications about subscriptions should be addressed to the Director of Circulation, 330 West 42nd Street, New York, N. Y.
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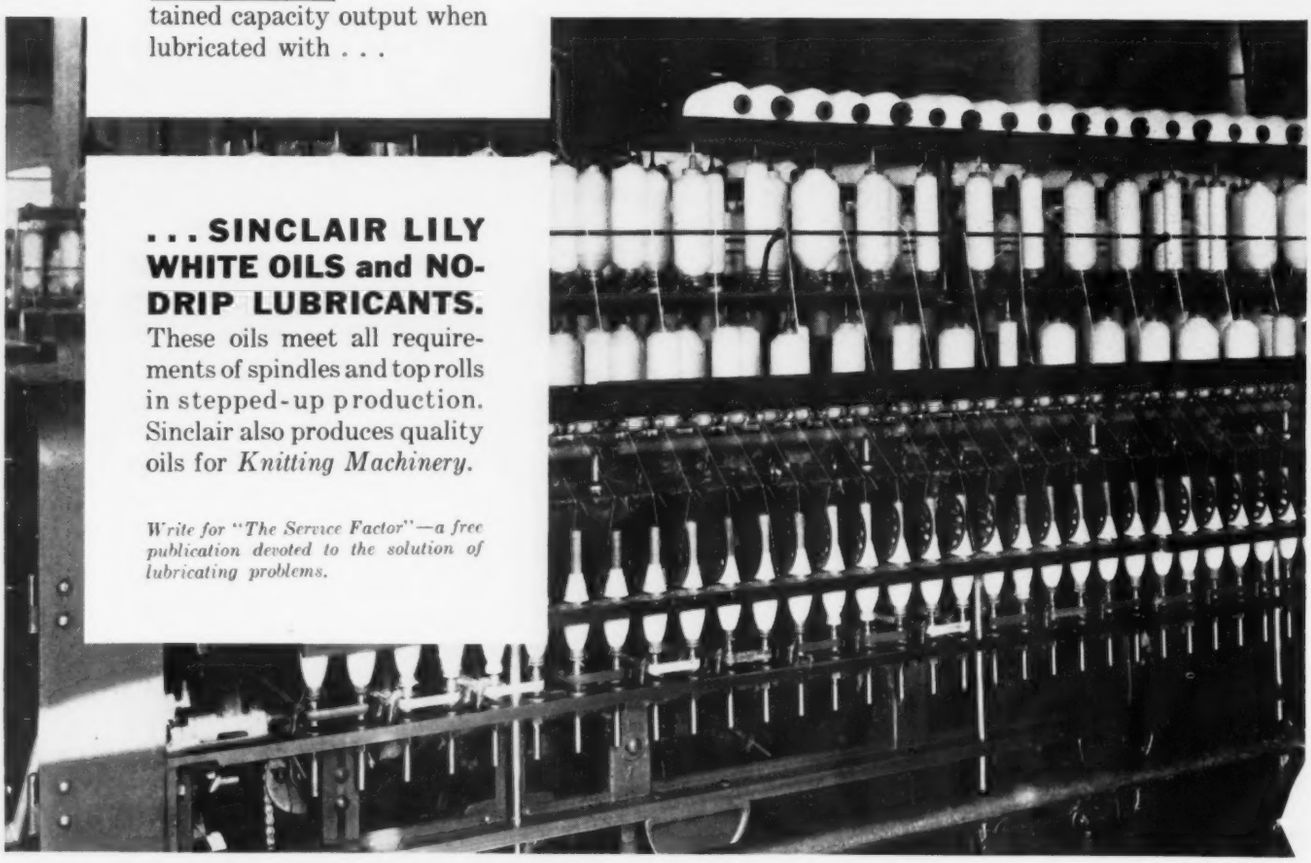
Tech.

WINNING EFFORT demands full time machine performance. *TEXTILE MACHINERY* delivers sustained capacity output when lubricated with . . .



. . . SINCLAIR LILY WHITE OILS and NO-DRIP LUBRICANTS. These oils meet all requirements of spindles and top rolls in stepped-up production. Sinclair also produces quality oils for *Knitting Machinery.*

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago • 10 West 51st Street, New York City • Rialto Bldg., Kansas City • 573 West Peachtree Street, Atlanta • Fair Building, Ft. Worth

More RED for the RED WHITE & BLUE

TEXROPE Goes to a war-time black!

YOU STILL GET . . .

1. The 50% stronger cords made possible by the sensational new Flexon process.
2. The 20% more cords that help give Texrope Super-7 V-Belts their extra "muscle".
3. The increased life provided by Texrope's shock-absorbing, cool-running rubber cushion.
4. The extra protection against grit, grease and dampness of the duplex-sealed cover. The *only* thing changed in cover design is the color!

NO ONE SAID we *had* to do it . . . but by sacrificing the red surface color identified with Texrope* Super-7 V-Belts, more rubber could be made available for Uncle Sam's new and special war-time needs.

So Allis-Chalmers did what *you* would have done . . . switched the famous "Red Belt" to a war-time black.

Will this color change affect you adversely? No. In each and every detail of quality-design, *Texrope V-Belts are unchanged!* They're still the same tough, smooth-working belts . . . that were literally *made to order* for today's new three-shift-a-day, round-the-clock operating schedules.

To step up the war-time efficiency of *your* power transmission, get the advice—and help—of your Texrope dealer or the Allis-Chalmers district office near you. Or write Allis-Chalmers, Milwaukee, Wisconsin. A-1517

*Trade mark registered U. S. Patent Office. Texrope Super-7 Belts are the result of the co-operative research and design genius of *two* great companies — Allis-Chalmers and B. F. Goodrich — and are sold exclusively by Allis-Chalmers.

Available in all sizes 1/2 hp to 2,000 hp

ALLIS-CHALMERS
MILWAUKEE · WISCONSIN

WE WORK FOR VICTORY — WE PLAN FOR PEACE

Mill Men

Comments by
Henry G. Lord

A correspondent, who calls himself "a young fellow of sixty-four," and is still active as a successful mill manager in the South, writes me that it was the Merrimack Manufacturing Company, at Lowell, Massachusetts, where the hand knotter was first tried out; not the Boott Mill as I thought. He was there at the time.

He says the difficulty which arose when the experimental knotters were received was caused primarily because the knotter was made to fit on the right hand of the operator instead of the left. The next lot of knotters received was O. K. and no serious difficulty was encountered in getting the operators to use them.

The overseer of that department of the Merrimack at that time was John Taylor who has since passed on. Those who knew John Taylor will probably agree with my friend that he was one of the finest and most efficient overseers the industry ever knew. He was ordinarily very quiet but, when occasion demanded, orders would issue from him like sparks from an electric coil, and the way he had of getting things done was uncanny at times.

My "Comment" page has put me in touch with a number of old friends and mill men whom I had not heard from for a long time. Sometimes I receive letters from parts of the country and the world far remote from where they were when I first knew them.

The great development of the textile industry in the South and the changes which occurred after the war, led to many migrations of mill men from New England. Some of them even went overseas. I was traveling in Colombia some years ago and visited a cotton mill in Barranquilla, where the superintendent greeted me most cordially and reminded me that the last time we met was in New Bedford. The next time I saw him was in Greenville.

Textile mill men move about like diplomats and consuls. I think it is a good thing for young men, if changes are made wisely to gain experience and responsibility, and not merely from restlessness.

HENRY G. LORD, *founder of Textile World and president, Bragdon, Lord & Nagle Division, McGraw-Hill Publishing Co.*

*Chloramine Fast Colors for Direct Dyed Army Fabrics**

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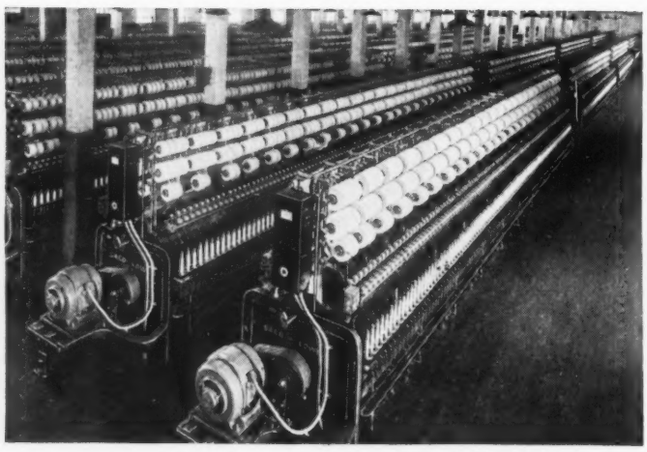
FOR PRODUCTION *after* VICTORY

Post-war production will introduce many new and advanced ideas by Saco-Lowell engineers . . . effecting economies and savings of fundamental importance.

Saco-Lowell today is a war production plant — working unceasingly for Victory. Nothing else is comparable in importance to us or to you. In our foundry, our machine shops, our assembly lines . . . our skilled craftsmen, production engineers and mechanics are building war equipment in place of textile equipment. And it will continue this way until Victory is ours.

For production after Victory Saco-Lowell engineers have continued their research for better and more efficient textile methods — and have developed many improvements which will be available for post-war production. Although these improvements cannot be made available today, our engineers are anxious to keep you informed on all our developments — and to show you how these improvements can be incorporated in your plans for the future.



Saco-Lowell Shops

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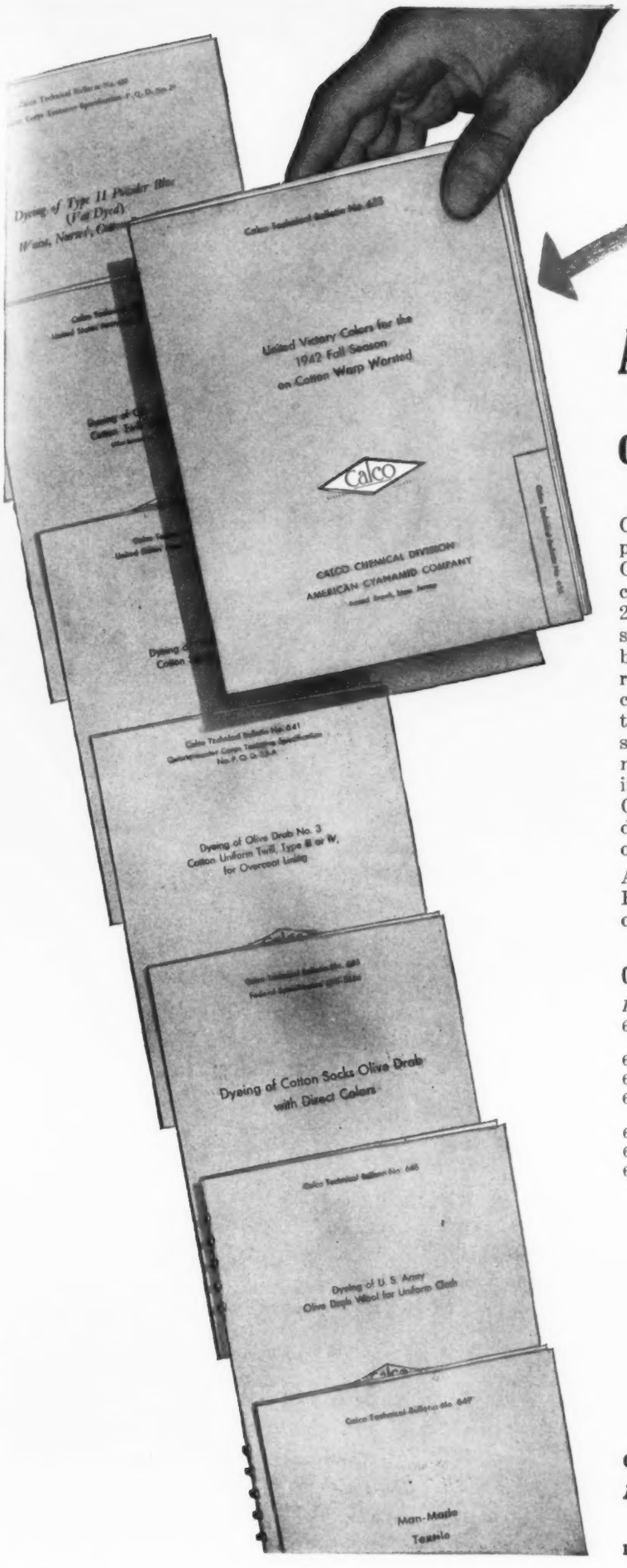
CHARLOTTE, N. C. GREENVILLE, S. C. ATLANTA, GA.


United Victory Colors for the 1942 Fall Season on Cotton Warp Worsted
Calco
CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
Dyeing of Olive Drab No. 3 Cotton Uniform Twill, Type III or IV, for Overcoat Lining
Dyeing of Cotton Socks Olive Drab with Direct Colors
Dyeing of U. S. Army Olive Drab Wool for Uniform Cloth
Man-Made Textile

Add *this* to your file of Calco's practical aids

Calco Technical Bulletin No. 655 is ready now as a practical aid in your work with the United Victory Colors established by the Textile Color Card Association. It shows accurate formulae for each of these 22 Fall colors, covering not only formulation, but suggested procedure for each. All formulae have been developed specifically to meet close shade requirements on an 11 oz. cotton warp fabric. The cotton warp accounts for 50% of the weight while the filling yarn is made up of 80% wool and 20% staple viscose rayon. Our Technical Service Department will gladly cooperate with your own colorists in developing formulations for United Victory Colors for use with mixtures of these same fibres in different proportion or for use with mixtures of other fibres.

As is the case with other Calco Technical Bulletins, Bulletin No. 655 is available to you without charge on request to our Bound Brook Office.

OTHER PRACTICAL BULLETINS AVAILABLE ON REQUEST

Bulletin No.	*Subject*
637	Dyeing of Type II Powder Blue (Vat Dyed) Waist, Nurses' Cotton Broadcloth
639	Dyeing of Olive Drab No. 3 Cotton Uniform Lining
640	Dyeing of Olive Drab No. 3 Cotton Silesia Lining Cloth
641	Dyeing of Olive Drab No. 3 Cotton Uniform Twill, Type III or IV for Overcoat Lining
643	Dyeing of Cotton Socks Olive Drab with Direct Colors
645	Dyeing of U. S. Army Olive Drab Wool for Uniform Cloth
647	Man-Made Textile Fibres

There's no time to lose
There's just time to WIN
Calco

CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
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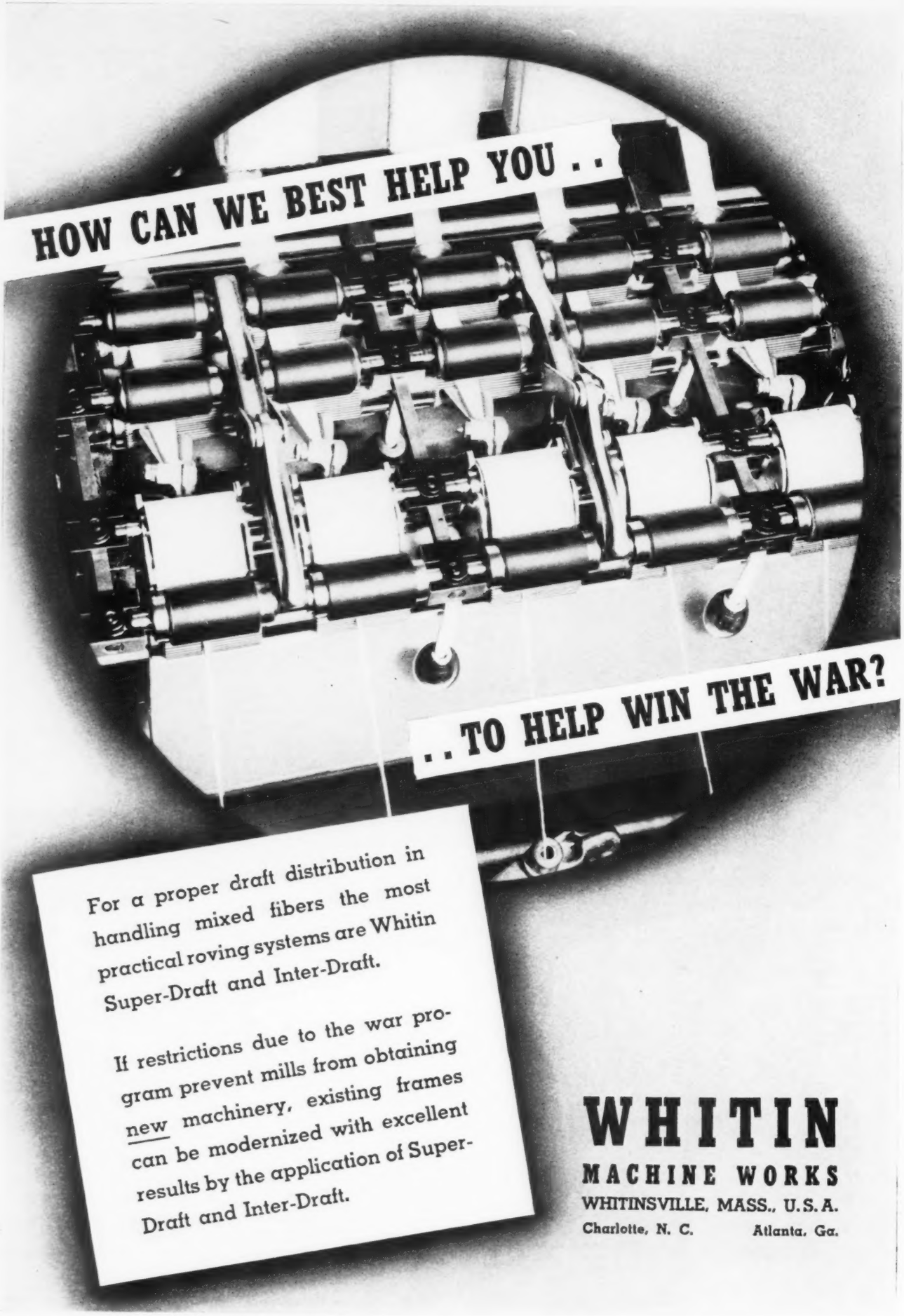
HOW CAN WE BEST HELP YOU . .
. . TO HELP WIN THE WAR?
For a proper draft distribution in handling mixed fibers the most practical roving systems are Whitin Super-Draft and Inter-Draft.
If restrictions due to the war program prevent mills from obtaining new machinery, existing frames can be modernized with excellent results by the application of Super-Draft and Inter-Draft.
WHITIN
MACHINE WORKS
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Charlotte, N. C. Atlanta, Ga.

THE RUBBER SHORTAGE IS MORE CRITICAL THAN YOU THINK

Numerous industrial rubber products now irreplaceable—except on highest priority. Crisis leads many industries to adopt G.T.M. Conservation Plan for extending life of present equipment

DURING the past few weeks thousands of plant engineers, production and maintenance experts from America's leading industries have enthusiastically approved a conservation program, to relieve the acute rubber shortage, presented at a series of nation-wide meetings held by the G. T. M. — Goodyear Technical Man.

To these key operating men the importance and necessity of an immediate, all out, rubber-conservation drive was emphasized by facts like these—

Many mechanical rubber items of wide use are no longer being made by any manufacturer.

Even goods sold on priority must now be built to wartime specifications that limit rubber content to less than standard prewar construction.

So critical is the shortage, reclaimed rubber is now on allocation. Practically all synthetic rubber is being used in military equipment.

Most serious of all, several million dollars worth of industrial rubber goods now in use will fail PREMATURELY this year through improper operation and care, judging by past experience. This will deprive plant operators of from 25% to 50% of the full performance built into these products—an irreplaceable loss to the nation.

COMPLETE MANUAL ON THE PROPER USE AND MAINTENANCE OF INDUSTRIAL RUBBER PRODUCTS—furnished free to your designated operating men.

THE G. T. M. INDUSTRIAL RUBBER CONSERVATION PLAN

The G.T.M. offers a complete, workable conservation program, based on long experience, for eliminating this unnecessary waste and insuring optimum performance from all industrial rubber products.

In factories large and small, operating men are now being taught how to prevent abuses, how to correct improper applications, how to make minor repairs that will prolong the life of industrial rubber products by means of—

"Goodyear Wages War On Waste"—the graphic educational slide film which presents, easily and clearly, recommended conservation practices.

Practical demonstrations on how to inspect, what to look for and what measures to take to correct, how to salvage hose and belts and give them new and additional use.

"Goodyear Industrial Rubber Products Conservation" manual, the concise 40-page, profusely illustrated G.T.M. handbook with practical ideas and suggestions.

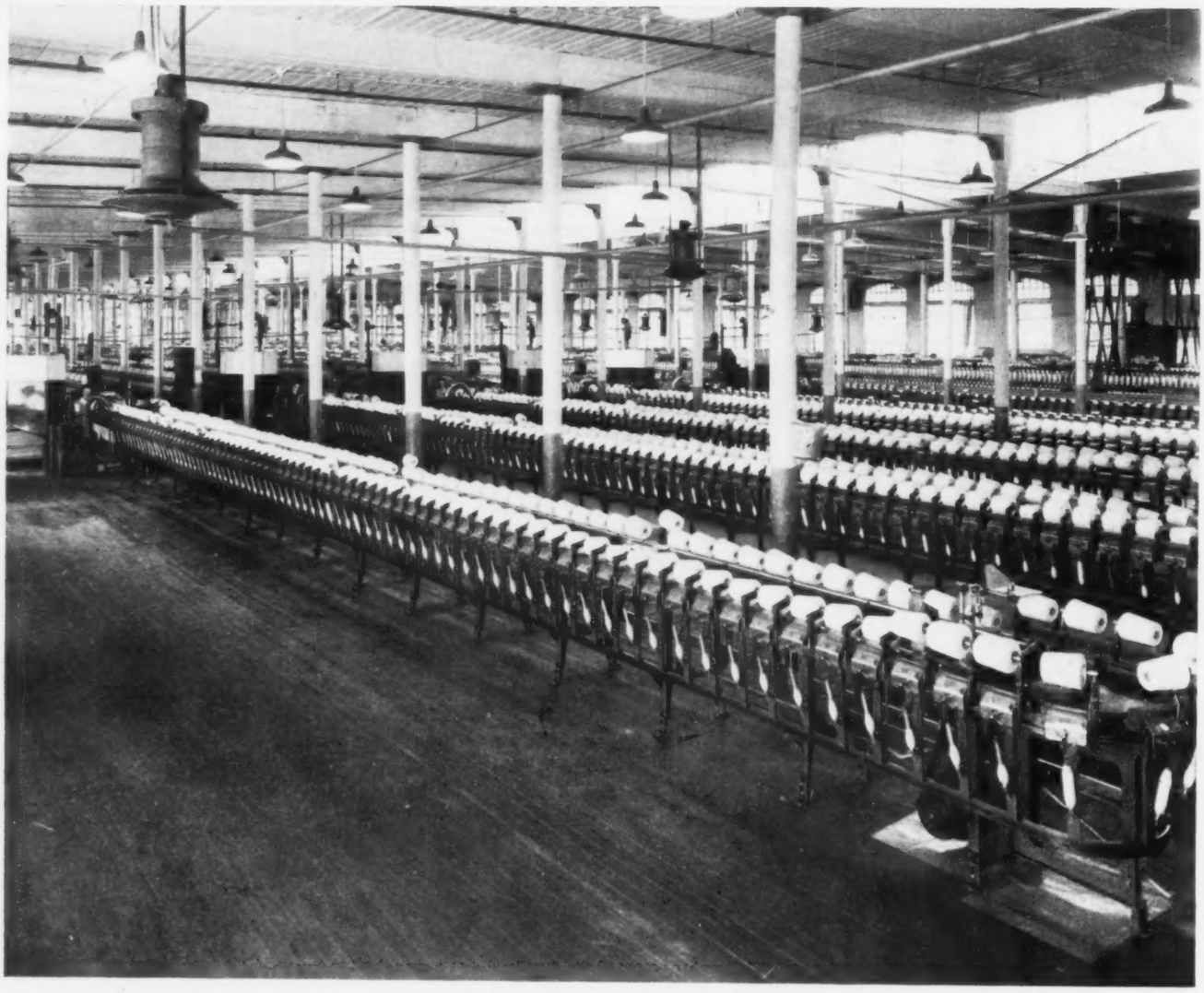
Industry-wide adoption of this program would mean a minimum saving of many million pounds of rubber products this year—products that many plants will not be able to replace.

HOW TO GET YOUR PLANT STARTED

The G. T. M. will be glad to present the complete program—film, demonstrations and manual—to your plant group. If you will write us, we will set a definite date for the G. T. M. to hold a meeting at your plant. If not possible to hold a meeting, write for manual. The sooner you start the program, the more benefit you will derive from it. There is no charge for this service—it is part of Goodyear's cooperation in the nation's drive for victory. To arrange your meeting or get copy of manual, write Industrial Conservation Department C-13, Goodyear, Akron, Ohio.

THE GREATEST NAME IN RUBBER

GOODYEAR
MECHANICAL GOODS



AUTOMATIC TRAVELING SPINDLE WINDING

KNITTING CONES ***DYE TUBES***
WARPING CONES ***TWISTING TUBES***

LABOR IS USUALLY REDUCED 65%

LARGE SAVINGS ALSO MADE IN HANDLING TO AND FROM WINDERS

BIG SIX POUND CHEESES IN TWISTER CREELS MAKE A FURTHER SAVING IN CREELING

AUTOMATIC WINDING IS NO LONGER A NOVELTY. IT IS STANDARD IN ALL PROGRESSIVE MILLS

LABOR FREED IN THE WINDING AND WARPING DEPARTMENT IS AVAILABLE FOR INCREASED PRODUCTION THROUGHOUT THE MILL

THIS EQUIPMENT IS MADE ONLY BY

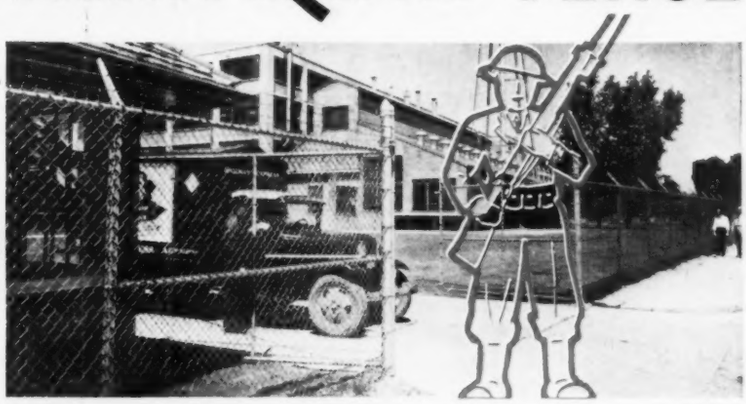
ABBOTT MACHINE COMPANY

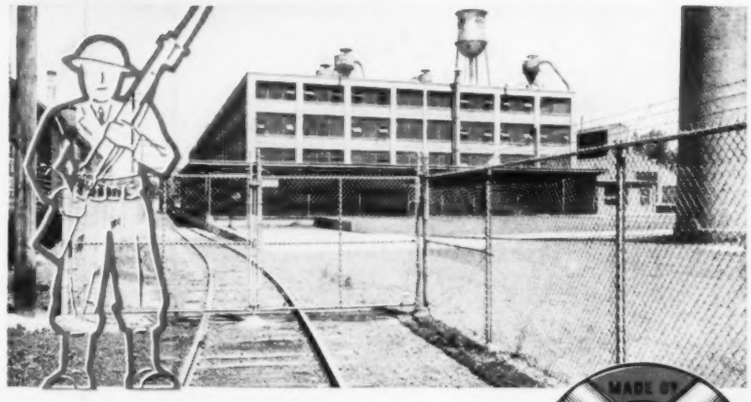
WILTON, N. H.

Southern Representative, L. S. Ligon, Greenville, S. C.

CONTINENTAL *Chain Link* FENCE

On Guard 24 hours a day





For modern industrial plants, fence protection is a vital necessity. Fence guards at vital points, day and night. It helps assure uninterrupted production. It controls entrance and exit of all persons. It lowers insurance premiums.

CONTINENTAL specializes in chain link fence for industry. The wire used in Continental fence is made of steel produced in our own furnaces which means that every step, from mixing and melting the steel to weaving the finished fabric, is controlled and personally certified as to quality by our own metallurgists and skilled workmen. Continental Fence is designed for your particular site and factory built ready for quick erection by trained crews.

FREE FENCE MANUAL A complete manual with 100 charts, drawings, photographs, etc. giving complete data on fence protection is yours for the asking. Write today. Ask for a copy of "Modern Property Protection".

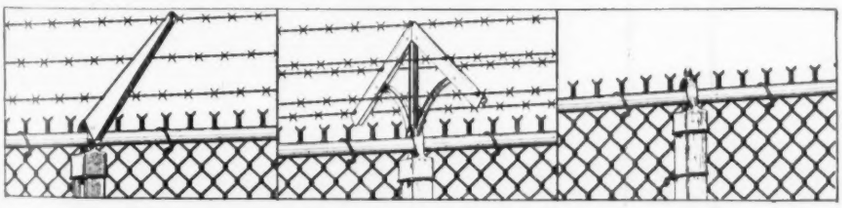
CONTINENTAL STEEL CORP., KOKOMO, INDIANA

Representatives and Distributors in Principal Cities

QUALITY OF MATERIALS

Only Continental Chain Link fence has fabric made of KONIK* steel for strength and rust resistance "clear through". The zinc coating applied by a special hot dip process has a uniform, bright finish.

*(During the war emergency, KONIK will not contain standard amounts of copper, nickel and chromium.)



CONSTRUCTION

(Left) Here are three of the many styles of top construction of Continental fence. This fence has sturdy "H" section line posts. Strong, easily operated gates are equipped with improved pivot type hinges. Modern through and through, Continental fence has 14 advanced features of construction.

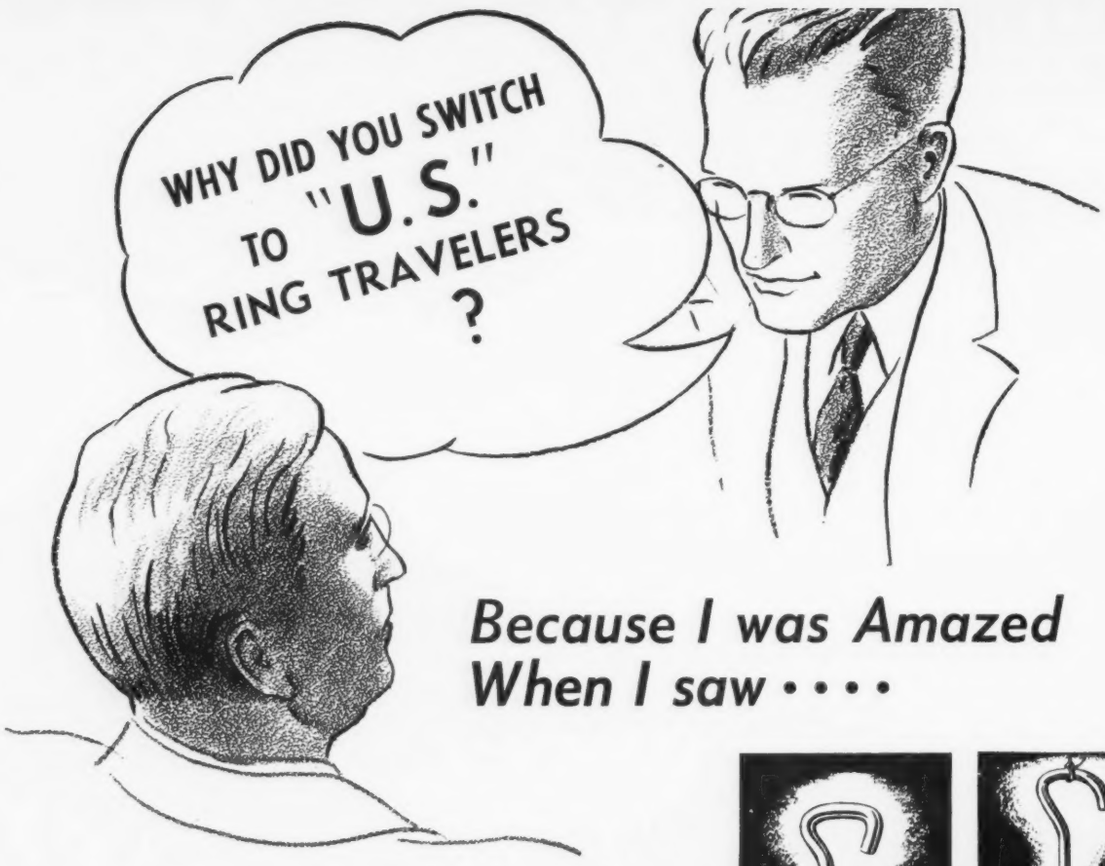
ERECTION SERVICE

Continental engineers work with you to plan the most practical fence for your plant. Trained erection crews are available, or a competent foreman will direct your workmen and maintain rigid inspection.

Lighter fence than Chain Link fence can satisfy many needs. For this purpose, Continental makes a complete line of field fence, diamond mesh, etc. These fences come in a wide range of heights, styles and wire spacings.

SHEETS: Black, Galvanized, Copperior, Hot and Cold Rolled, Special Coated, Long Terne, etc.

WIRE: Bright Basic, Annealed, KONIK, Copperod, Tinned, Special Manufacturer's, etc.

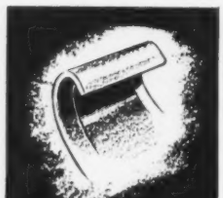


Because I was Amazed When I saw • • • •

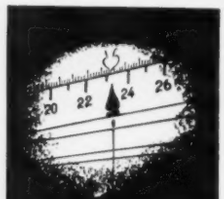
That question—and answer—usually "start the ball rolling" when experienced textile men talk about "U. S." Ring Travelers. They see, after a brief trial, that "U. S." Travelers are the surest means of *stopping trouble* in spinning, twisting and throwing any type of yarn. They see that the perfect design of these Travelers, for each type of service, SPEEDS PRODUCTION—which is a MUST today! They see longer-running travelers, less traveler or ring wear, better lubrication, fewer breakdowns. They see that IT PAYS to switch to "U. S." Ring Travelers, and to utilize the expert consulting and advisory service we put behind them. Samples for test, upon request. Interested? Why not let us make a stroboscopic study of spinning operations in your mill? Write OR WIRE today.

THE NE-BOW
Prevents yarn ends flying out, provides ample head-room for threading — prevents binding on ring. Note "bend inward" at top of horn.

PERFECT BALANCE
Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.



THE BEVEL EDGE
Great pioneering "U.S." contribution to smooth spinning, twisting. Eliminating angular edges, gives uniformity of tension, more even yarn, less "fly."



HEAT CONTROL
for better metal—dominates "U.S." production! Carburizing and tempering ovens are electrically controlled through pyrometers — for better performance.

U. S. RING TRAVELER CO.

PROVIDENCE, RHODE ISLAND

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M. Lee Bolton, P. O. Box 7234, Philadelphia, Pa.

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Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

U·S RING TRAVELERS

A TRAVELER FOR EVERY FIBRE

Everything we conserve actually adds to our production!

This helpful book covers:
Engineering the drive Installations Slippage Repairing Belts Belt Dressings Storage Standard Reference Tables and Formulas.

FREE BOOK *your belt men need!*

It is our belief that the greatest service we can render in this production drive is to broadcast factual data that will make belts last longer and produce more. Accordingly, we have prepared a pocket-size manual on belt care, covering briefly and clearly the essentials of proper design and maintenance of leather belt drives.

This booklet is offered freely to concerns which wish to have copies for their maintenance men as a guide to proper care of leather belts. Longer life without costly down-time means increased production, which you can count on when high grade leather belts possessing high coefficient of friction are wisely installed. Sign and send the coupon below to–

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Chicago - PHILADELPHIA - Detroit

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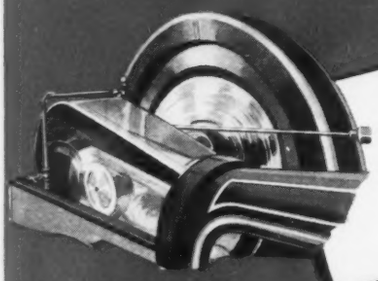
Leather Belting

E. F. HOUGHTON & COMPANY
303 W. Lehigh Ave., Phila., Pa.

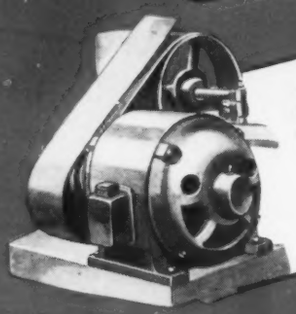
GENTLEMEN:
Please send me a copy of your booklet "How to Make Your Leather Belts Last Longer . . . . Produce More!"

Name ..... Title .....
Firm .....
Address ..... State .....
City .....

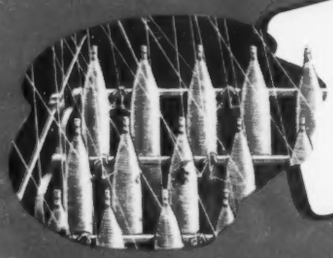
From Power



Steam Engines "Tide Water 100% Pennsylvania Cylinder Oils provide efficient and economical lubrication for steam cylinders thereby assuring dependable operation of these important prime movers."

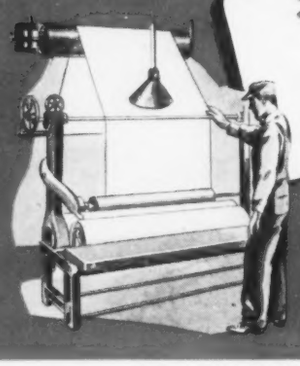


Electric Motors "9 years without a bearing failure." Tide Water Green Cast Greases hold their body; won't break down or thin out quickly. The reason — more cylinder oil and a minimum of soap.



Spindles "300,000 spindles operating for 13 years without a single lost tube. Tycol's Spindle Oil most satisfactory lubricant we have ever found." There are six Tycol Spindle Oils engineered for ball, roller or plain bearing spindles.

Looms "400 looms in our mill have been running trouble-free for over five years." Tide Water Greases retain their body — they do not splatter onto the warp.



Tentering Frames "Tide Water Textile Oils specially refined to resist oxidation and carbonization solved the difficult problem of lubricating hot tenter chains." The result — minimum wear of chain links and freedom from carbonaceous deposits.

Plant to Finishing

Tycol *Engineered* Textile Lubricants assure *efficient machine performance, maximum production, minimum wear.*

TODAY'S all-out schedules in the textile industry are throwing a heavy load on machinery. With new equipment scarce and present facilities burdened, there is a pressing need for lubrication that keeps machines working efficiently.

Tide Water's complete line of oils and greases will efficiently meet the lubricating need of the textile industry—from keeping power equipment running smoothly to improving spindle performance. Many years of dependable service in textile manufacture—wool, cotton, silk, and rayon—have proved the economy and reliability of Tycol lubricants. In the present emergency mill owners and operators can depend on Tide Water lubricants to sustain machine operation with maximum economy and untroubled performance.

Whatever your lubrication problem, there is a Tide Water textile lubricant engineered to meet your particular need. Our helpful bulletin "Principles of Textile Mill Lubrication" will be sent to you on request. Tide Water's experienced textile engineers will be glad to consult with you if desired. Write for full information to Tide Water Associated Oil Company, 17 Battery Place, New York, N. Y.

DRUMS! War needs make it extremely important that all empty drums be returned immediately.

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ESTABLISHED 1840

If He Changes to Khaki He'll Still be A Customer

For thirty years Master 'Teen has been an important market for vivid Franklin Process Colors. If the time comes when he has to change to khaki, he'll still be a customer, for right now we are dyeing immense quantities of military colors.

The advantages of Franklin Process Yarn Dyeing, in terms of defense, are as follows:

1. It eliminates waiting for yarns to be spun from dyed stock.
2. Having large stocks of natural yarn in all four plants and unequalled package dyeing capacity, it can make prompt deliveries.
3. Having adequate twisting and winding equipment, it can deliver special as well as standard constructions on any usual put-up.

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

★ Providence, Philadelphia, Greenville, Chattanooga; New York Rep., 40 Worth Street; Chicago Rep., 100 W. Monroe Street.

HOW TO GET LONGER LIFE *and* BETTER WORK FROM CARD CLOTHING

USE A BURNISHER BRUSH SPARINGLY

The primary purpose of a burnisher brush is to polish the sides of the wire BEFORE grinding. It should NOT be used after grinding unless absolutely necessary, because it has a tendency to dull the points.

The only excuse for using it in this way is to knock off hooks on the points which poor grinding has produced.

Occasionally mills use a stripping brush for burnishing. This is dangerous practice, since it may damage the wire or the foundation.

A burnisher brush, like other card clothing, should also have the correct wire for the purpose. Let Ashworth help you to select it.

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PIONEERS IN CARD CLOTHING . . . *ASHWORTH BROS., INC.*

Woolen Div. AMERICAN CARD CLOTHING CO.

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This NEW, PRACTICAL, POCKET-SIZED SAFETY DIGEST

Can Help You . . .

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ve scarce materials . . .
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rotect your plant . . .
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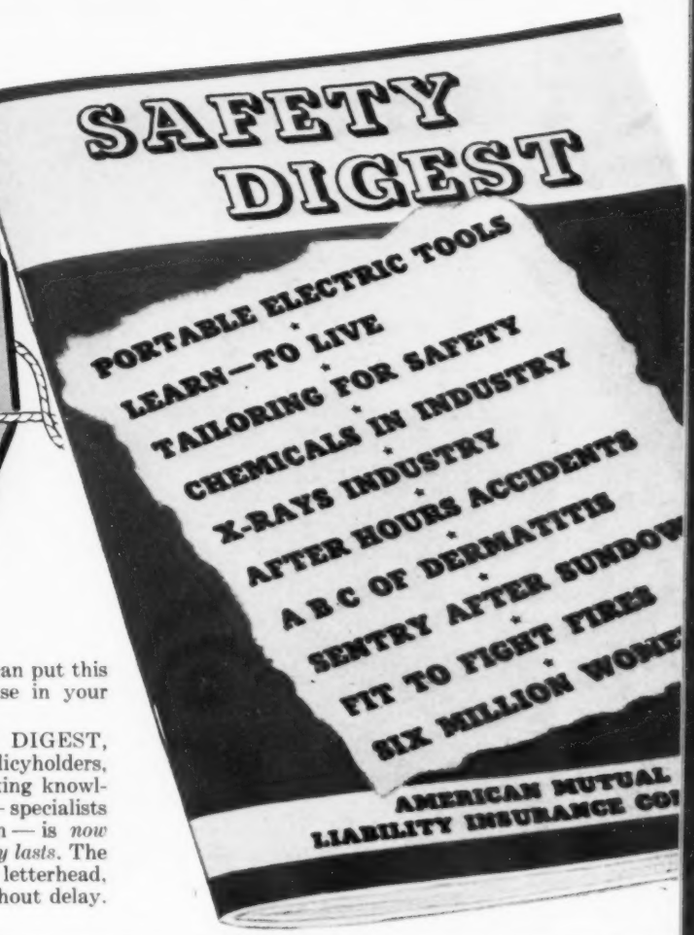

Here — at last! — condensed for quick-and-easy reference, is the gist of years of accident-prevention experience, a modern, up-to-date SAFETY DIGEST geared to the mighty upsurge of war-time industry!

Every executive, superintendent and overseer, will find here vital facts, plans-for-action directly related to your most important supervisory problems — prepared by men familiar with textile operations. If you are faced with green help — new machines, new materials, new processes — you can put this book into practical, everyday use in your mill, right now.

Send for it today! SAFETY DIGEST, published as a service to our policyholders, and based on the practical working knowledge of our Safety Consultants — specialists in industrial accident-prevention — is *now freely available as long as the supply lasts.* The coupon below, attached to your letterhead, will bring you your free copy without delay.

Hiring GREEN HELP? Handling NEW YARNS? Processing NEW MATERIALS? Risking SABOTAGE? Here are Facts — Plans-for-Action!

LEARN — TO LIVE

Your green help — and the importance of training them in safety procedures. An experienced safety consultant outlines the problems of the rapid hiring of new unskilled, semi-skilled and skilled workers in war-time, and how you can save hours of production through a simple program of safety education.

SENTRY AFTER SUNDOWN

How to choose and train a night watchman under today's conditions. A complete, factual accounting of a job which has received all too little attention, together with an outline, immediately usable in your plant, of a war-time watchman's duties and qualifications.

SIX MILLION WOMEN

The rapid hiring of a potential six million female workers in war industries poses new problems in accident prevention. Here, a safety consultant experienced in women-employing industries outlines the new problems which women will bring to your accident-prevention, personnel and supervisory staff, and how they may be most easily solved.

OFF-THE-JOB ACCIDENTS

How to safeguard your employees' health and safety in their homes and on the highway after work, is the subject of this highly practical article, doubly important today when every man-hour counts in the "battle of production." Here is the basis for an accident-prevention program which has already increased production, improved morale, in many industries.

PORTABLE ELECTRIC TOOLS

With several million portable electric tools being used by America's war-working plants, the subject of their safe handling becomes a matter of fundamental importance to both industrial management and the industrial worker. This article isolates their hazards, projects practical plans for preventing them from becoming accidents.

FIT TO FIGHT FIRES

A fundamental review of the organization, training and equipment of employee fire-fighting brigades capable of taking decisive, effective action against fires caused by arson, accident or air raid. A timely study of the way to fight industry's most dangerous war-time hazard.

TAILORING FOR SAFETY

The importance of the right protective clothing for each plant is thoroughly analyzed by an experienced safety engineer, together with case histories of industrial hazards which only protective clothing can eliminate and a concise plan to help you discover your plant's safe clothing needs.

THE ABC OF INDUSTRIAL DERMATITIS

The twelve most troublesome questions commonly asked in connection with industrial dermatitis, answered by an Industrial Hygienist of long practical experience. Answers are sufficiently comprehensive to enable any industrial concern to approach its dermatitis hazard with greater knowledge and assurance.

CHEMICALS IN INDUSTRY

A five-point program for preventing accidents from chemicals, together with a tabular presentation of 75 common chemicals and their inherent hazards. An invaluable guide for all industries facing unfamiliar risks arising from the introduction of new war-time chemicals into their manufacturing processes.

INDUSTRIAL X-RAYS

Increasing use of X-ray equipment for inspection of materials and products has created an increasing hazard to industrial workers. Here, an experienced safety consultant describes ways and means to safeguard X-ray practices.

OTHER AMERICAN MUTUAL AIDS TO PROFITABLE OPERATION

Modern, comprehensive coverage fitting your special needs for workmen's compensation, contractors' public liability, fire, automobile, fidelity bonds and other forms of casualty insurance written by American Mutual and affiliates.

Cash dividend opportunities which have always saved 20% or more of insurance costs (a big item in your operating costs).

Safety recommendations which have lowered many policyholders' rates well below average — as well as helping to avoid the delays and troubles that accidents cause.

American Mutual is the leading writer of compensation insurance in the textile industry.

Admitted Assets	$47,908,092.19
Liabilities	40,659,020.90
Surplus to Policyholders	7,249,071.29

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WORKS FOR YOUR SAFETY

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Please send me free your new "Safety Digest"

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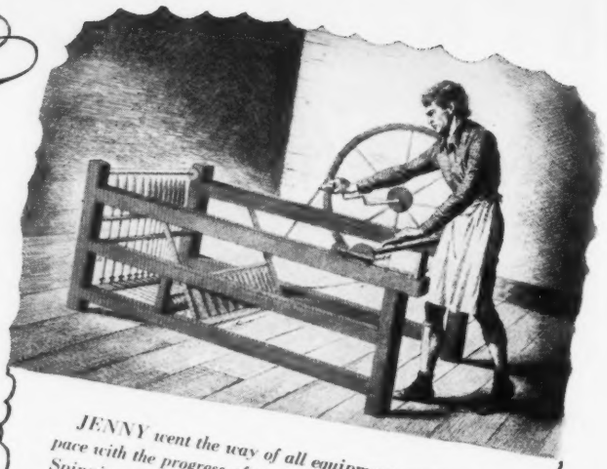
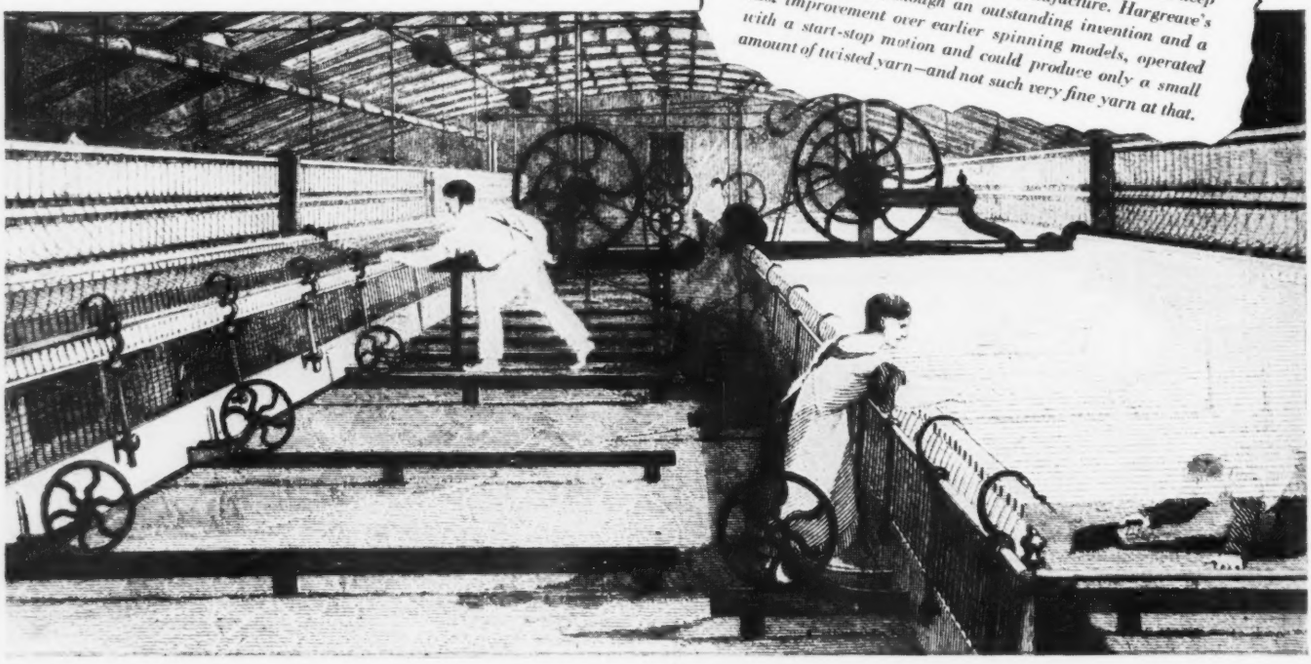
Jenny Doesn't Live Here Any More



JENNY went the way of all equipment unable to keep pace with the progress of textile manufacture. Hargreave's Spinning Jenny, though an outstanding invention and a vast improvement over earlier spinning models, operated with a start-stop motion and could produce only a small amount of twisted yarn—and not such very fine yarn at that.



NOW, compare the Jenny with the Mule-Spinning machinery invented by Samuel Crompton in 1779 to produce fine quality yarns and subsequently improved to be made "self-acting". Immediately you can appreciate what more *continuous* movement meant to the spinning of yarn.

This old engraving does not tell the whole story. Nearly all inventions of textile machinery up to that time had been directed solely at increasing production. The "mule", however, had as its primary objective the manufacture of finer qualities of yarn and its development carried cotton manufacture "to a perfection it would not have otherwise attained." It is another example of increased efficiency in textile manufacture that resulted from *continuous* motion.

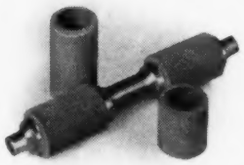
Just as the "mule" eliminated the stopping, starting and changing of the jenny, so has Industrial's "Continuous Process" eliminated the stopping, starting and changing of conventional rayon yarn production. In one *continuous* operation, SPUN-LO yarn is spun, washed, bleached, treated, dried and twisted.

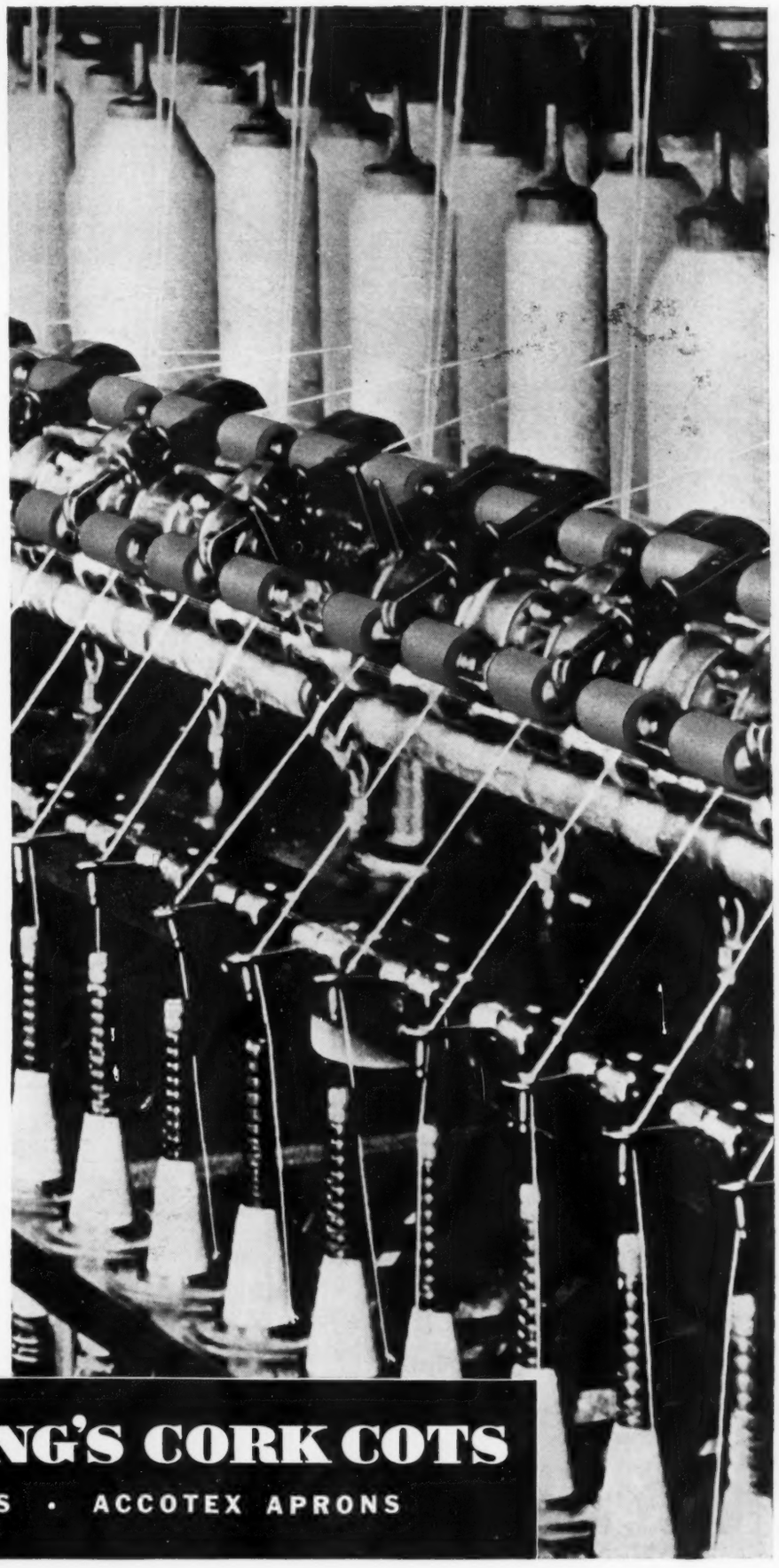
And once again process improvement has meant product improvement, for SPUN-LO yarn, made by the "Continuous Process," is virtually free from knots and broken filaments and is more uniform in strength, lustre and denier. Increased weaving efficiency is its natural result.

"CONTINUOUS PROCESS" Spun-lo Rayon
Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION • Cleveland, Ohio—New York Office, 500 Fifth Avenue

Why CORK serves the most spindles





APPROXIMATELY 9,750,000 spindles are running on Armstrong's Cork Cots—more spindles than are equipped with any other roll covering. These Cots have climbed to "first place" because, under all ordinary conditions, they spin the best yarn in the shortest time at the lowest cost.

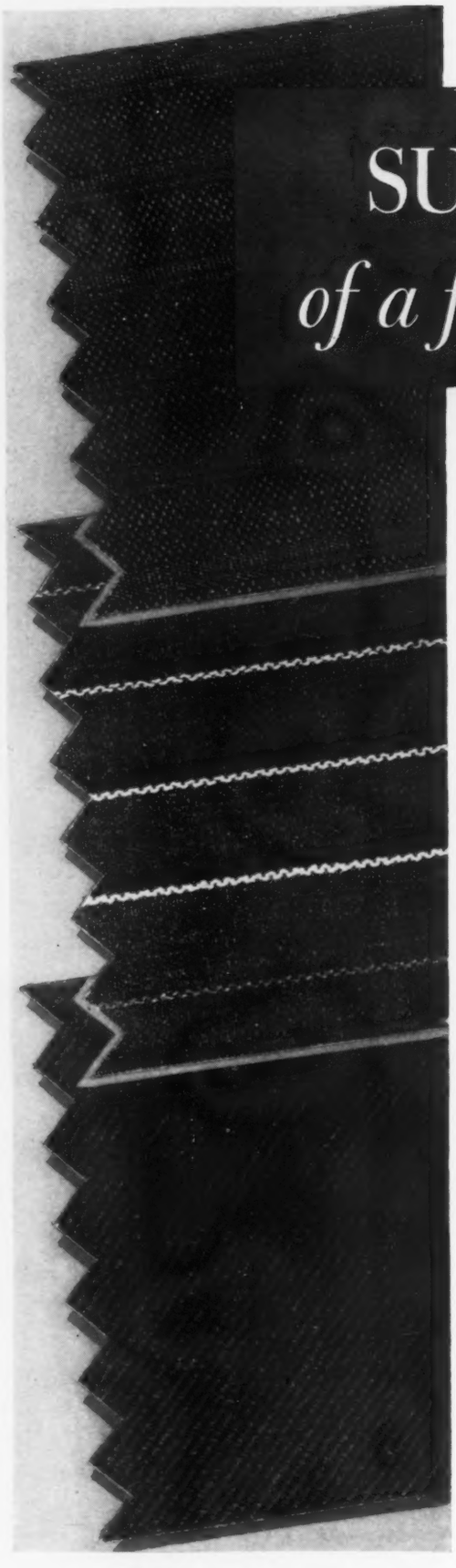
Here are the reasons: First, cork possesses a higher coefficient of friction than any other roll covering material. This advantage assures positive drafting and prevents eyebrowing. Secondly, cork is more resilient—provides a better "cushion"—which results in better running work. Thirdly, not only is its initial cost low, but cork has proved itself by far the least expensive roll covering on the basis of long-range usage. Armstrong's Cork Cots have a long initial life, and they can be rebuffed 3 to 4 times for greatly extended service.

To make certain that mills using Armstrong's Cork Cots benefit fully from these advantages, Armstrong roll covering specialists are on the road as usual.

And remember—if you need synthetic cots for extra-heavy duty, you can get immediate delivery of Armstrong's Accotex Cots. Orders for Accotex Long Draft Aprons also can be filled promptly. Armstrong Cork Co., Textile Products Section, 927 Arch Street, Lancaster, Penna.

ARMSTRONG'S CORK COTS

ACCOTEX COTS · ACCOTEX APRONS



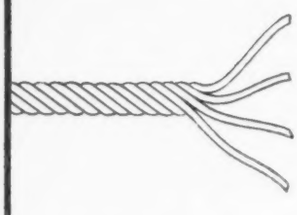
SUCCESS STORY *of a famous fabric family*

. . . a typical result of FOUR-PLY SERVICE!

WE'RE ESPECIALLY PROUD of the Trossach fabrics—because their success has brought added success and profits to many of our customers.

The Trossachs are a large family of dress and sportswear fabrics, created by our fabric development experts, in which four textile fibers are combined to produce the desired fabric properties. Bright viscose rayon for strength, dull viscose rayon for texture, acetate rayon for color effect; and wool for touch appeal. In three years, millions of yards of these fabrics have been produced and sold.

Here is another example of the way our FOUR-PLY SERVICE gets results for you. Although our only products are rayon yarns and fibers, we don't stop there. To help you solve any problem connected with rayon—whether you require a new fiber, a new fabric, improved mill technique, or sales assistance—our FOUR-PLY SERVICE is ready to aid you.



1 **FIBER RESEARCH**—Helps you get the right yarns.

2 **FABRIC DEVELOPMENT**—Helps you design new fabrics.

3 **MILL TECHNIQUE**—Helps solve mill problems.

4 **SALES ASSISTANCE**—Helps sell finished fabrics.

AMERICAN VISCOSE CORPORATION

WORLD'S LARGEST PRODUCER OF RAYON YARN

CAROLYN TESTED AND APPROVED RAYON FABRIC

SALES OFFICES: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.

PLANTS AT: Marcus Hook, Pa.; Roanoke, Va.; Parkersburg, W. Va.; Lewistown, Pa.; Meadville, Pa.; Nitro, W. Va.; Front Royal, Va.

*Reg. U. S. Pat. Off.

Copr. 1942—American Viscose Corp.

A *Finnell* COMBINATION SCRUBBER . .

Speeds Removal of Hazardous Oil and Grease from Floors . .

At AMERICAN AIRLINES, INC., New York Municipal Airport

"Each of our hangars," writes American Airlines, Inc., "has an area that would accommodate a full-size football field with 12,000 square feet left over for bleachers. With the continuous overhauls and checks going on, a considerable amount of oil and grease is dropped on the floor. Your *Combination Scrubber,* with one operator, thoroughly cleans the entire floor area—removing every trace of the oil and grease—in three-quarters of a working day."

Whether the *Finnell Scrubber-Rinser-Drier* (the one machine handles all operations) is for use on floors of an airplane hangar or of a textile mill, it's the practical solution to the problem of *quickly* removing slippery substances, dirt, et cetera, from large-area floors . . . to provide cleaner, safer floors for workers . . . to reduce fire liability as well as accident hazards.

For consultation, literature, or free floor survey, phone or write nearest *Finnell* branch or Finnell System, Inc., 1907 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

COMBS

SPRING-POSITIVE EXPANSION AND SPECIAL COMBS

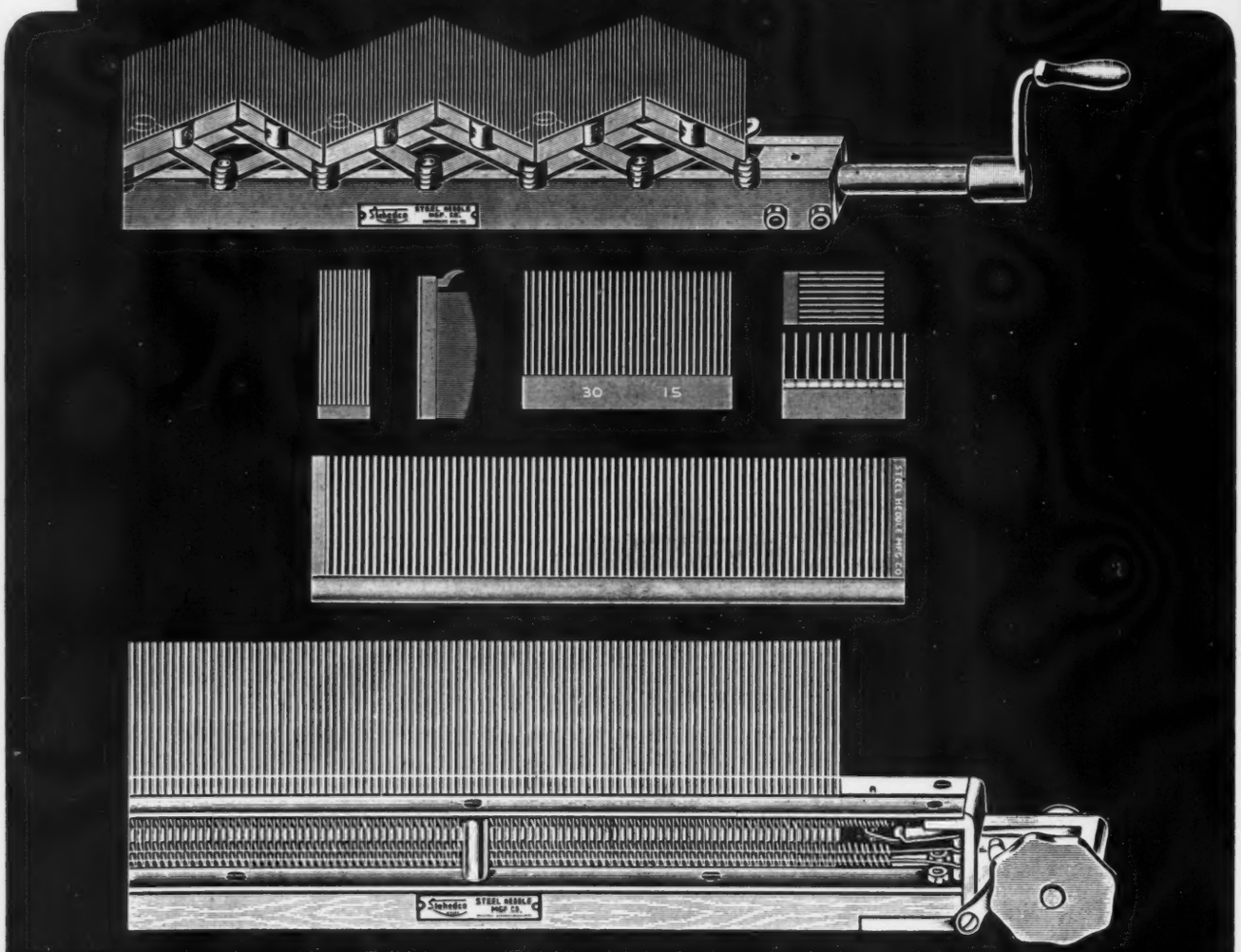
Are you using the one that is most advantageous for the particular construction of the fabric you are weaving, regardless of texture?

Much can be accomplished by the use of the proper comb.

That is why our Engineers have devoted so much study to their use and construction with the result that we have possibly the largest assortment from which to choose.

Our Field Staff will be delighted to work and check with you free of any obligation.

See our BULLETIN ON COMBS



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Manufacturers of Superior

BRANCH OFFICES ALL OVER THE WORLD

FLAT STEEL HEDDLES—HARNESS FRAMES—ALL TYPES OF LOOM REEDS—TEMPERED DOGWOOD SHUTTLES—LOOM HARNESS ACCESSORIES

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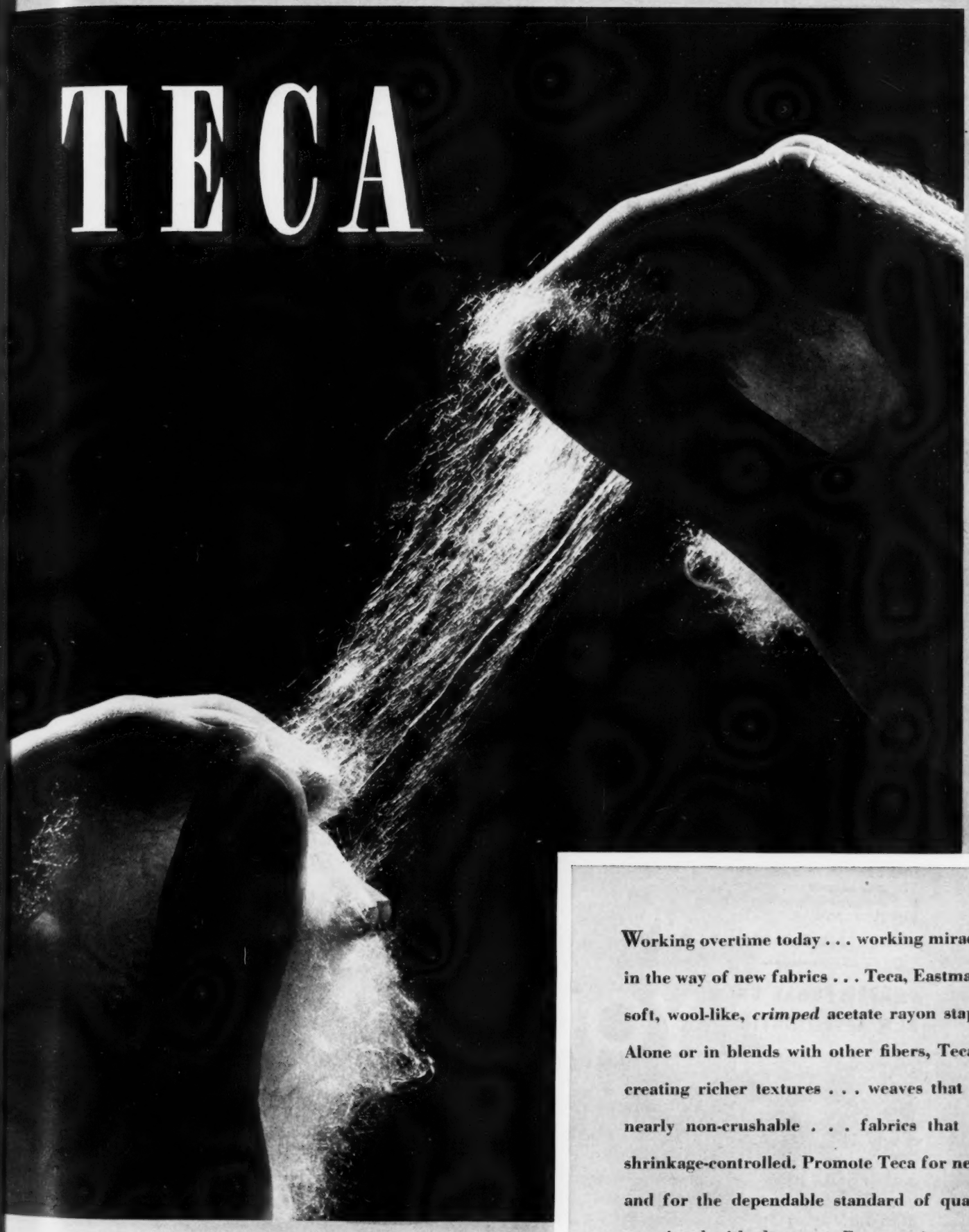
FIELD ENGINEERS IN EVERY DISTRICT

TECA



Working overtime today . . . working miracles in the way of new fabrics . . . Teca, Eastman's soft, wool-like, *crimped* acetate rayon staple. Alone or in blends with other fibers, Teca is creating richer textures . . . weaves that are nearly non-crushable . . . fabrics that are shrinkage-controlled. Promote Teca for news, and for the dependable standard of quality associated with the name Eastman in rayon.

Eastman

CRIMPED ACETATE RAYON

FOR INFORMATION ABOUT TECA, CONSULT A. M. TENNEY ASSOCIATES, INC., 10 EAST 40TH STREET, NEW YORK CITY, SALES REPRESENTATIVES FOR TENNESSEE EASTMAN CORPORATION, KINGSPORT, TENN., SUBSIDIARY OF EASTMAN KODAK CO.

RODNEY HUNT NEWS

Chief Rohunta

TEXTILE MACHINERY — WATER POWER EQUIPMENT — ROLLS AND REELS

19 HEFTY MEN

THIS SUPER-

Striking evidence of the
new Rodney Hunt "Pipe
Steel Reels is this photog
husky workmen standing
a 19 foot reel. This pa
one of many reasons wh
mills are standardizin
Stainless Steel Reels.

SEE CATAL

NO END ROT OR

WITH "SELF-

The photo at left shows
corrosion affects ordin
period of service. Wit
—your roll troubles
shafts and no rings
The seal outlasts the
and unequalled in va
ney Hunt product.

SEE CATALO

WATER POWER U

NEW ANTI-FRICTIO

Hunt Anti-Friction B
Water power users sa
has solved one of
turbine maintenance
step bearings in the d
type suspends the ent
above, eliminating
bearing entirely. Write

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LARGEST STAINLESS STEEL DYE

AND WHY

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20 foot, 6,000 gallon
Stainless Steel
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steel reel with no
"Tru-Shade" units
strength, conven-
to leading finishing
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ER CUTS 30%

G COSTS

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and Reels

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of Rodney Hunt's new TEXTILE MACHINERY CATALOG No. TM42. 132 pages. Bound in cloth. The most complete catalog of wet finishing equipment ever compiled. Covers TRU-SHADE Stainless Steel Dyeing Machines, Washers, Fulling Mills and many other lines of modern textile machinery. Write for copy on your firm letterhead to

RODNEY HUNT MACHINE COMPANY

66 Mill Street · Orange, Massachusetts, U.S.A.

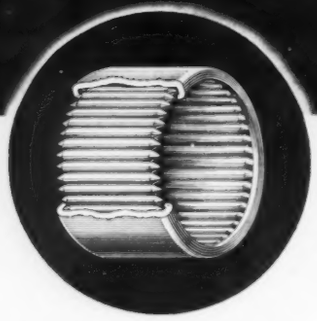
Few garments demand more durable, uniform knitting than swimsuits, because of the rigorous conditions under which they are worn. Torrington Needles are ideal for this purpose. Their machine-made strength and uniformity make a definite difference in quality—quality that means sales and repeat sales. For the precision with which Torringtons are made carries over into the work they do. Use Torringtons—the machine-made needles in the famous red and green box—to increase the value and lower the cost of this and all such difficult knitting jobs.

TORRINGTON latch NEEDLES

The Torrington Company, Torrington, Conn., U.S.A., Established 1866

Branches: New York • Philadelphia • Chicago • Boston • Greensboro, N. C. • St. Louis • Los Angeles • Toronto, Canada

ONE SPECIFICATION THAT *HASN'T* CHANGED



HE used to design knitting machines: now he's working out the details of aircraft sub-assemblies. Or perhaps he has "changed over" from blueprints of streamlined trains to medium tanks—and so it goes.

He was able to take conversion in stride because of his background, resourcefulness and adaptability to new problems and requirements. You'll find fresh evidence of this every day on assembly lines all over America.

The Torrington Needle Bearing, too, has "changed over"—and its adaptability is proving itself anew—in applications where its unique advantages mean more today than ever.

Its small size, for example, is saving space and critical materials. Its remarkable ease of installation is cutting assembly time . . . its low coefficient of friction, assuring smooth performance . . . its high capacity and efficient lubrication, reducing the need for replacement or maintenance attention—all are vital wartime features.

It is not surprising, then, that engineers and designers, in changing over to war production, have found the Needle Bearing to be one of the important specifications they haven't had to change.

FOR INFORMATION *concerning capacities and sizes, send for Catalog No. 116. Or consult a Torrington engineer. He is an expert in adapting the Needle Bearing's advantages to specific problems.*

LET'S GO! U.S.A. KEEP 'EM FLYING!!

THE TORRINGTON COMPANY

TORRINGTON, CONN., U. S. A. • *Est. 1866*

Makers of Needle and Ball Bearings

New York Boston Philadelphia Detroit
Cleveland Seattle Chicago Los Angeles
San Francisco Toronto London, England

TORRINGTON NEEDLE BEARING

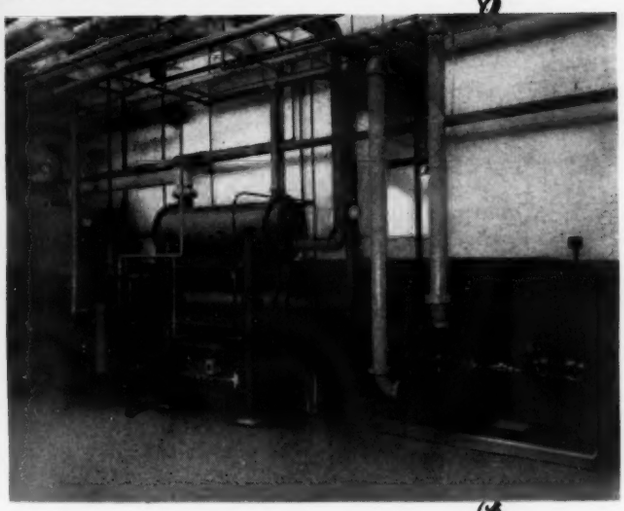
Every feature fills a wartime need

DERBY DRY CLEANER

1 of 10 Installed or On Order

There are reasons and here they are—

Dry Cleaning Machine



Solvent Recovery Plant

1. Complete removal of tar, chalk marks, paint, etc.
2. Removal of 99.8% to 99.9% of process oil, mineral or vegetable.
3. Not only may low grade process oils be used, but may be used over and over again
4. Burling and mending time greatly reduced because imperfections are made prominent.
5. Scouring for cleanliness eliminated.
6. Saving in soap and alkali up to 75%.
7. Big saving in steam.
8. Big reduction in redyes and seconds.
9. No stream contamination from oil residue.
10. Increases in carding of about 10% because recovered oil works better than new oil.

This machine cleans cloth direct from the loom. Send for our circular and get the complete story.

RIGGS & LOMBARD, INC.

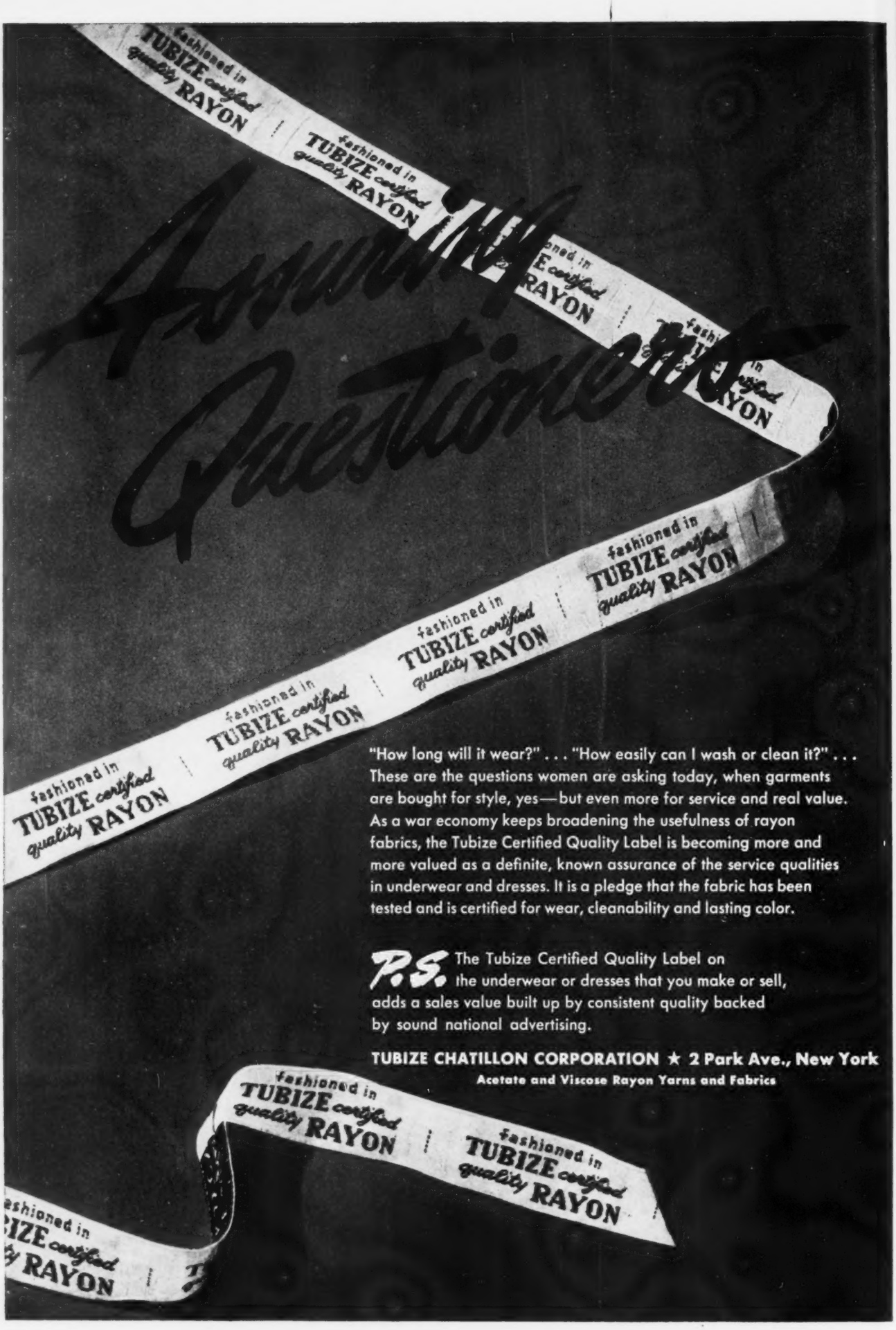
Foot of Suffolk St. **Lowell, Massachusetts**

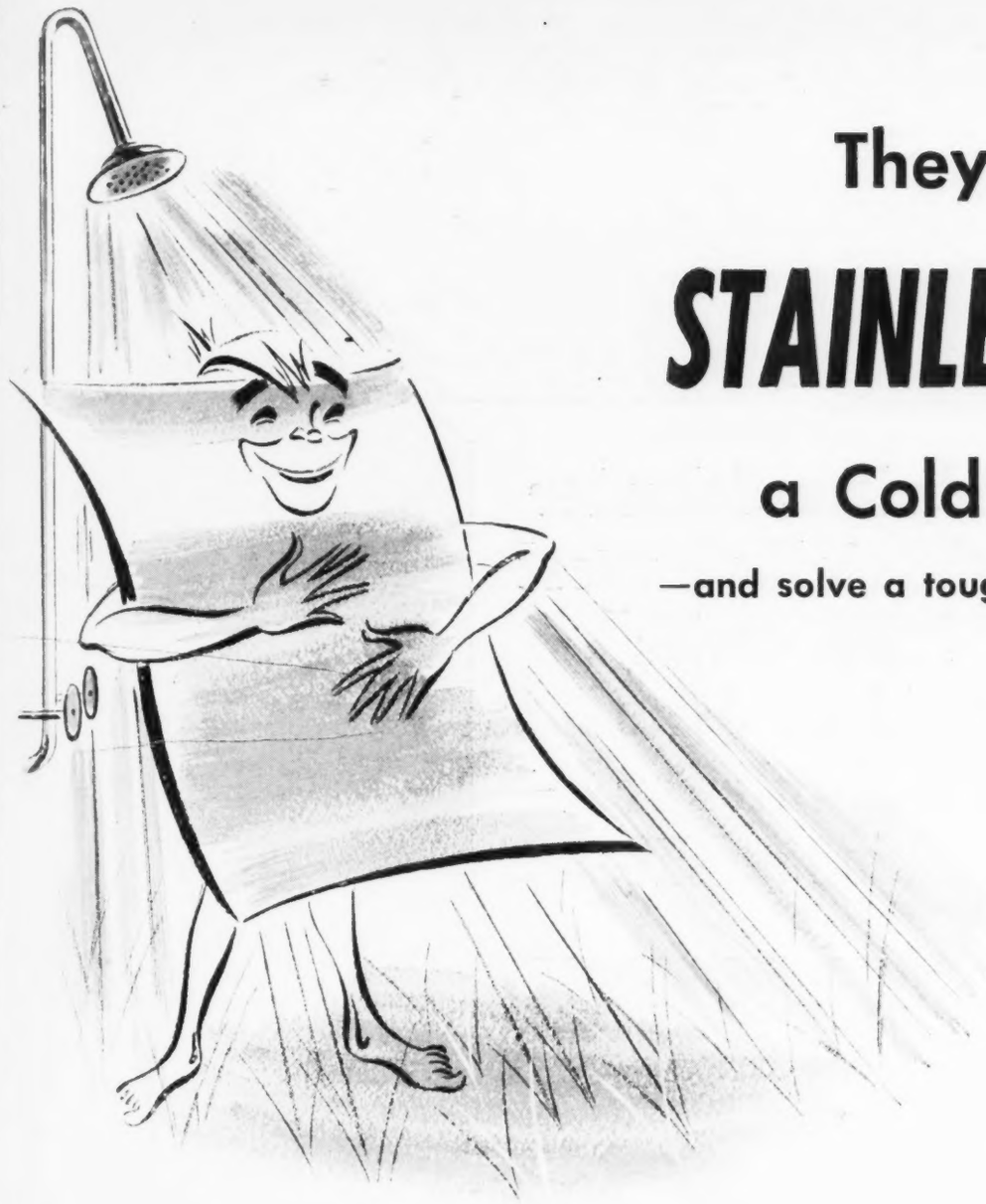
AGENTS: Paul A. Meriam, 11 Berwick Lane, Edgewood, R. I.; Harold C. Osler, 6312 Sherwood Road, Philadelphia, Pa.

The Fleet Line

OF FINISHING EQUIPMENT

Cloth Washers, Batch and Continuous • Fulling Mills • Piece Dye Kettles • Dye Becks • Rope Soapers • Cloth Carbonizing Ranges • Derby Continuous Dry Cleaner • Soaping Machines • Tenter Dryers • Crushers • Rolls • Reels • Parts.


fashioned in TUBIZE certified quality RAYON
Answering Questions
"How long will it wear?" . . . "How easily can I wash or clean it?" . . . These are the questions women are asking today, when garments are bought for style, yes—but even more for service and real value. As a war economy keeps broadening the usefulness of rayon fabrics, the Tubize Certified Quality Label is becoming more and more valued as a definite, known assurance of the service qualities in underwear and dresses. It is a pledge that the fabric has been tested and is certified for wear, cleanability and lasting color.
P.S. The Tubize Certified Quality Label on the underwear or dresses that you make or sell, adds a sales value built up by consistent quality backed by sound national advertising.
TUBIZE CHATILLON CORPORATION ★ 2 Park Ave., New York
Acetate and Viscose Rayon Yarns and Fabrics



They Give

STAINLESS STEEL

a Cold Shower

—and solve a tough corrosion problem

IN equipment for handling dilute sulfuric acid, tests under operating conditions indicated that 18-8 Stainless Steel containing molybdenum would give satisfactory service life under the highly corrosive conditions. The corrosion resistance and high strength of this material permitted engineers to use a new and more efficient design. When plant operations began, it was found that even this highly-resistant steel was being corroded in a few spots. Electro Metallurgical Company engineers were asked to solve the problem.

Inspection showed that due to increased temperature of certain parts of the equipment above the liquid level the dilute acid was being concentrated. This concentrated acid combined with higher temperatures produced the corrosion. The solution to the problem was a water spray on the affected areas to prevent temperature rise and subsequent acid concentration.

In stainless steel equipment handling dilute acids or acidic vapors, it is important that acids are not allowed to concentrate where they may cause corrosion. Periodic inspection of your stainless steel equipment, especially stacks and flues, will show whether you have such a corrosion problem in your plant.

Although we do not make steel, we have for more than 35 years produced "Electromet" ferro-alloys used in the making of steel. With the knowledge accumulated from this experience we are in a position to give impartial advice on the selection and use of stainless steels. If you have a specific problem in the use, maintenance, or fabrication of stainless steel, consult us.

ELECTRO METALLURGICAL COMPANY

Unit of Union Carbide and Carbon Corporation

30 East 42nd Street UCC New York, N. Y.

In Canada: Electro Metallurgical Company of Canada, Limited, Welland, Ontario

Electromet

Trade-Mark

Ferro-Alloys & Metals

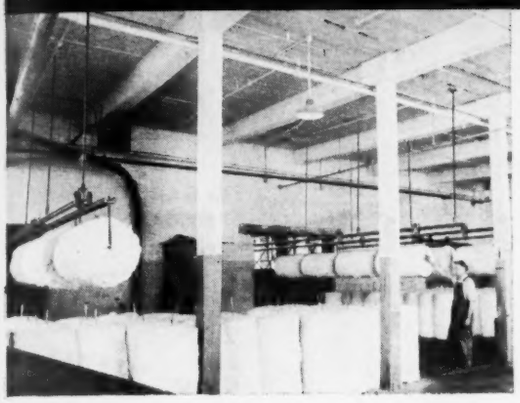
PERKINS
HOLYOKE
TRADE MARK REG.

The Perkins Calender roll shop is the largest in the world;
.. and there is no substitute for Perkins quality

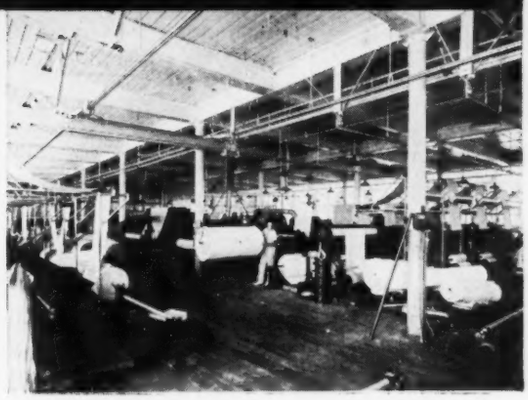
AMERICAN MONORAIL EQUIPMENT

HELPS SPEED UP WAR PRODUCTION

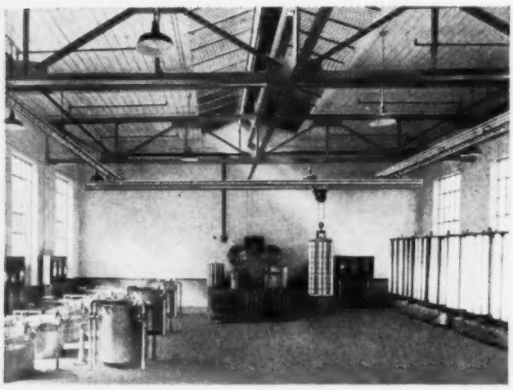
IN EVERY TEXTILE OPERATION



• Production moves easily with each carrier handling four laps on tracks extending throughout the card room.

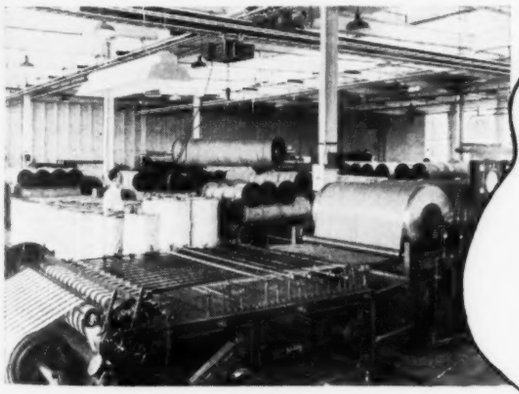


• Short hand-operated crane serves finishing machines and interlocks with spur track to inspection machines.



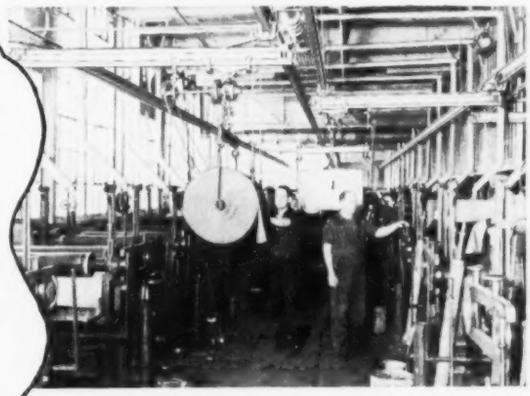
• Simple hand pushed crane with electric hoist completes the operation of this modern package dye house.

• Overhead handling of warps and rolls permits compact arrangement of looms by taking up aisle space.



• Hand operated crane with electric hoist covers beam storage area for serving slashers.

Ask us to show you how American MonoRail will help step up production in your mill to help you help win the war.



• Short transfer cranes interlock together to serve all jigs in this dye shed.

THE AMERICAN MONORAIL CO.

13108 Athens Avenue — Cleveland, Ohio

Chases Trouble . . . Protects Quality

Toughness and *smoothness* are the characteristics of Emmons "Certified" steel heddles that make them your best buy.

The "warp pests" that interfere with production and quality — chafed spots, rust marks, cut yarn — keep out of sight when Emmons heddles "police" your weaving. Moreover, high tensile strength and corrosion-resistant plating give you longer heddle life, fewer replacements.

Careful plant inspection and periodic tests by an outside laboratory double-check these qualities. Write "Emmons" on you next order for steel heddles and get the *smooth strength* that guards as well as guides your yarn.

Be Certain — Buy Certified

EMMONS LOOM HARNESS COMPANY
Lawrence, Massachusetts . . . . Charlotte, North Carolina

HERE'S HIGH-SPEED STAMINA FOR YOU

Look for the black EMMONITE metal finish on the ends of Emmons Heddle Frames. This new Phytanium-blended *protective penetrant* smooths out inequalities in the grain of metal parts, fights rust and wear. EMMONITE, *not* a surface coating, will not break, peel or rub off.

There's *long life* too, and *better weaving* in the extra number of rolled rivets in Emmons Heddle Frames, which prevent buckling even at highest speeds, and in their hand-picked, knotless lumber, doubly shellacked, which cannot catch the yarn.

EMMONS

WORKS TO OLD AGE — BUT STILL RESILIENT

There's all the resilience of youth in Emmons reeds, without sacrificing the rigidity that makes for long life. Each dent — uniform to .001″ and spaced to .01″ — is resilient enough to let good knots, slubs and nits pass through; dents instantly spring back into position, without the spreading that causes reed marks in the cloth.

"Does it deserve this seal?" Careful inspection is required before it is placed on every shipment of Emmons products.

EMMONS

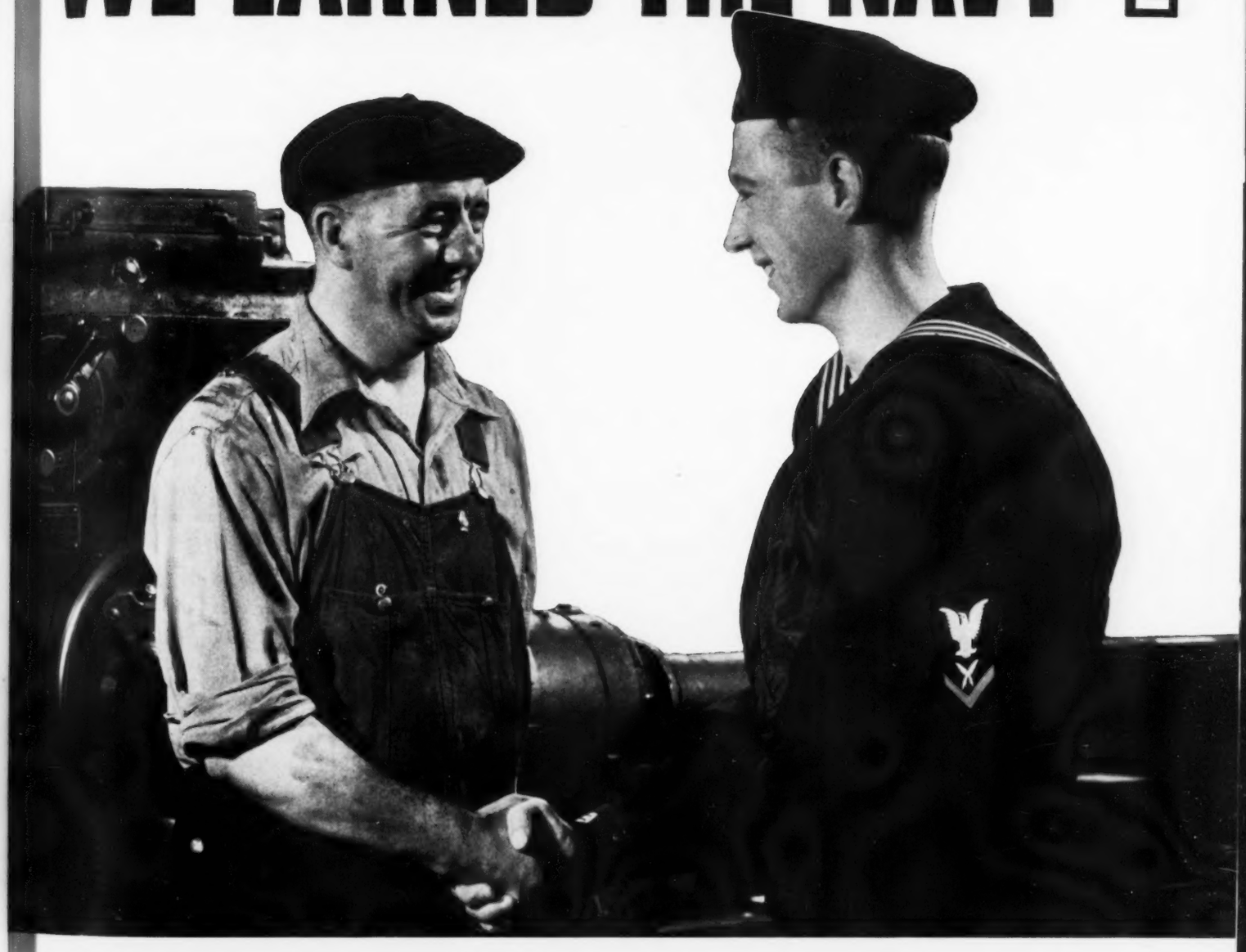
Lawrence, Mass. and Charlotte, N. C. Products stocked in Charlotte and Lawrence. Reeds manufactured at both plants. Branch offices: Clifton Watson, Manager of Southern Sales, George Field, Plant Manager, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2543) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 171 Madison Ave., New York (Tel. Lexington 2-6060) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

Argentina, Buenos Aires, Roberto Zander, 345 Juan Jaures; *Brazil*, Rio de Janeiro, A. Polak, Caixa Postal 362; *Chile*, W. L. Robinson, Casilla 1570, Valparaiso; *Cuba*, Havana, J. M. Perez-Pena, Box 1611; *Mexico*, Mexico City, D. F. Leo Lenk, Apartado 533; *Colombia*, Medellin, C. E. Halaby & Co., P. O. Box 139.

See latest TEXTILE WORLD YEARBOOK for Details on all Emmons Products.

Sailor—

WE EARNED THE NAVY "E"



Our pledge to the Navy

To the United States Navy and to the Nation, we of American Blower pledge the unstinted devotion of our experience, our ability, our effort. Whether destined for use on the battle lines, or to equip other essential industries for production of vital material — the products of our efforts, we pledge, will continue to measure up to the standard of excellence that is worthy of the commendation, "Well Done." We are proud of the privilege of working under the Navy "E" burgee — proud to wear the insignia conferred on us. By our progress in production, we shall continue to demonstrate our patriotism and determination to win. We are mindful of our responsibilities. We are working, and shall continue to work, for Victory!

MECH. DRAFT · AIR-CONDITIONING
AMERICAN BLOWER
FLUID DRIVES · DUST COLLECTORS

AMERICAN BLOWER

AMERICAN BLOWER CORPORATION, DETROIT, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO
Division of AMERICAN Radiator and "Standard" Sanitary Corporation

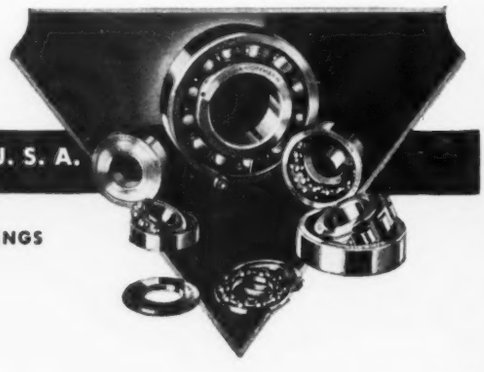
YOUR MACHINE EQUIPMENT

A treacherous, insidious saboteur lurks in every plant engaged in war production, alert to every opportunity to damage your machines and curtail your output. FRICTION is his name, and your only safeguard against him is the vigilant protection of F.B.I.—FREQUENT BEARING INSPECTION.

Keep all bearings clean and well lubricated. Exclude dust, dirt and moisture. Use only high-grade lubricants. Watch for the first signs of unusual heat or noise or looseness in the bearings. If possible, keep replacement bearings at hand, for a quick substitution if needed. America, in her vast war program, cannot afford to lose a single machine-hour of production. Guard against such losses by FREQUENT BEARING INSPECTION.

We will gladly cooperate with you in maintaining or increasing your production—by experienced counsel on the use and care of anti-friction bearings, and by supplying you, wherever possible, NORMA-HOFFMANN PRECISION BEARINGS for replacements.

Write for the Catalog. Let our engineers work with you.



NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U. S. A.
FOUNDED 1911

PRECISION BALL, ROLLER AND THRUST BEARINGS

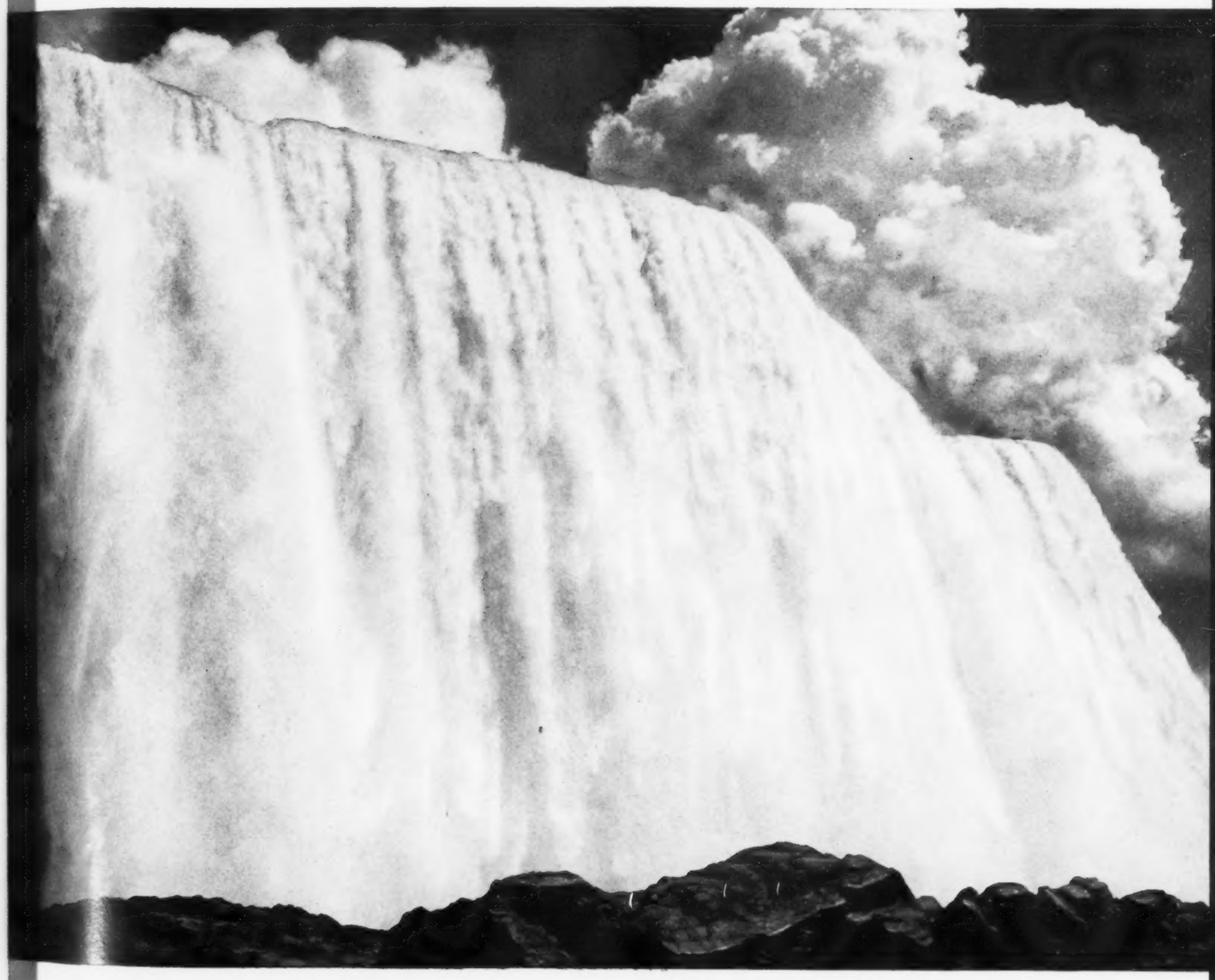
To have ...and TO HOLD

Not for beauty alone is Niagara Falls famous. To people in this country, and in other countries, too, it is an expression of America. In its grandeur they sense the wild, free spirit that has swept this nation on and on with irresistible force. Like the never-ending wheat fields... like the bottomless mines... like the roaring factories and towering cities, it typifies the boundless energy of the U. S. A.

Our youth has found romance and pledged loyalty in the mists of Niagara. Our industry has found power in its cataracts to drive its great dynamos. And the very fact that its power and beauty are shared in peace and friendship with a neighbor country has made it a shrine of good will at which people the world over may take heart. Surely, these great Falls give voice to all that America is fighting for today—the permanent, steadfast, dynamic way of life that can be directed to the good of all but never tamed to slavery.

We who work within sight and sound of Niagara Falls are devoting every ounce of our energies and facilities to speeding the flow of chemicals for Victory.

CAUSTIC POTASH • CAUSTIC SODA
PARA • CARBONATE OF POTASH
LIQUID CHLORINE



Niagara ALKALI COMPANY
60 EAST 42nd STREET, NEW YORK, N. Y.

To solve difficulties in procuring the original balloon cloth for Army Sleeping bags under Quartermaster Corps Tentative Specification P. Q. D. No. 135, invitation No. 669-42 Phila-Neg-102 requests bids on two alternate fabrics as well. Illustrated here is the original cloth.

How to Increase Production . . . and Still Save Chemicals

MONSANTO CHEMICALS FOR THE TEXTILE INDUSTRY

Acetic Acid
Aluminum Sulfate
Aroclors (chlorinated diphenyls)
Calcium Sulfate
Caustic Soda
Chlorine
Dyestuff Intermediates
Disodium Phosphate
Glauber's Salt
Lacquers
Merclor (bleach)
Mixed Acid
Ammonium Phosphates
Nitrate of Iron
Oil of Vitriol
Phosphoric Acid
Santomerse (wetting and surface active agent)
Sodium Acid Pyrophosphate
Sodium Bisulfite
Sodium Sulfate, anhydrous
Sodium Sulfite
Solvents
Sopet (wool spinning lubricant)
Sulfuric Acid
Tetrapotassium Pyrophosphate
Tetrasodium Pyrophosphate
Tricalcium Phosphate
Trisodium Phosphate

NEVER before has the textile industry produced such vast quantities as it is being called on to produce today . . . yet the calls for more, like the invitation to bid on the sleeping bag fabric illustrated here, continue to mount.

Never before has it been so vitally important to make the most efficient possible use of labor, machines, raw materials, processing materials.

To help meet those urgent calls for more and more production with a minimum of hard-to-get textile chemicals, here are four questions every textile manufacturer will want to ask himself:

1. *Is my store-keeping system waste-tight?* Am I guarding against evaporation loss of volatile materials . . . spoilage of heat and moisture-sensitive materials . . . leakage from storage vats and bins?

2. *Are my formulas waste-tight?* Am I making up my processing solutions in *exactly* the quantities needed for the goods to be processed so that no left-overs are wasted?

3. *Are my processes waste-tight?* Are there any ways I can change a process or adjust my methods of application to use less of a given material?

4. *Is my production equipment waste-tight?* Would control instruments on such equipment as scouring machines, slashers, or dyeing machines help cut waste?

For our part, we are bending every effort to increase production on all the twenty-seven essential chemicals which Monsanto supplies to the textile industry . . . *without* sacrificing those two essentials you must have in every shipment of textile chemicals—*uniformity* and *quality*. MONSANTO CHEMICAL COMPANY, St. Louis, Missouri, and Everett Station, Boston, Massachusetts.

MONSANTO CHEMICALS
SERVING INDUSTRY...WHICH SERVES MANKIND

Faster Production for Victory

...Often Means That Your Plant Must Control Its Own Weather!

Celotex Vapor-seal Roof Insulation and Celotex Bonded Built-Up Roofs are Important Factors In Controlled Temperatures and Humidity

WHETHER you are enlarging your plant to speed production for victory, or remodeling it, or both—you will be devoting special attention to its most vulnerable exposure—the roof.

By placing Celotex Vapor-seal Roof Insulation between your manufacturing processes and outside heat or cold, you facilitate the control of temperatures and humidity which are so often essential to maximum production speed. And, in northern climates, you materially reduce heating costs!

By using Celotex Bonded Built-Up Roofs, you are assured of guaranteed protection against repair expense for either ten, fifteen, or twenty years.

Write for the name of your nearest Celotex Roofing Contractor.

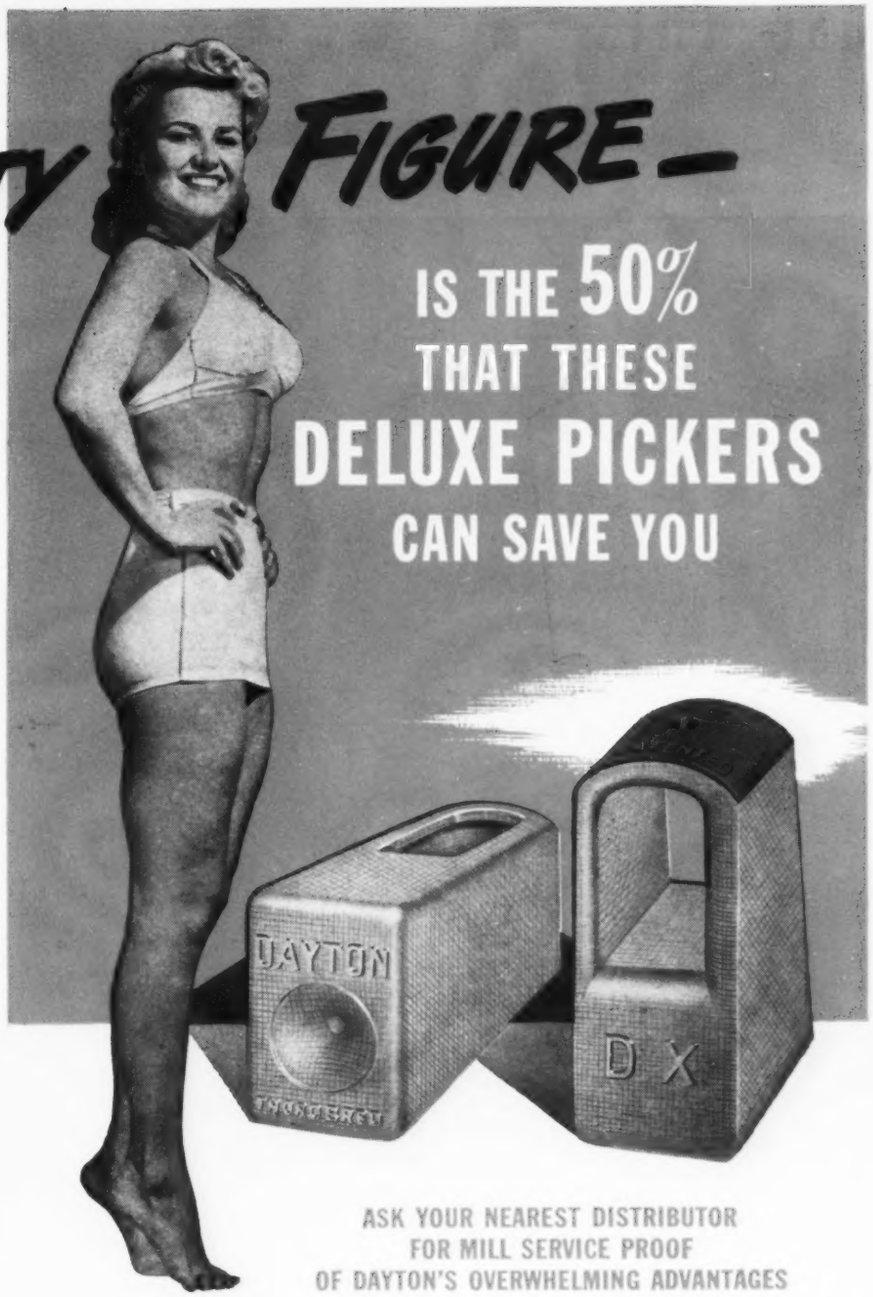
CELOTEX
REG. U.S. PAT. OFF.
BUILDING PRODUCTS

VAPOR-SEAL ROOF INSULATION **BONDED BUILT-UP ROOFS**

The word Celotex is a brand name identifying a group of products marketed by The Celotex Corporation.

THE CELOTEX CORPORATION • CHICAGO

A PRETTY FIGURE—



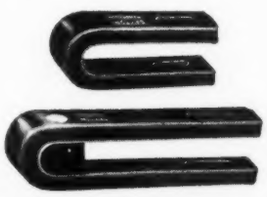
A 50% REDUCTION IN COSTS—is a mighty pretty figure—the kind of a figure that the Dayton DeLuxe Pickers can save you. The Dayton DeLuxe is made of specially selected fabrics which are two times stronger—finely woven for maximum smoothness and bonded with an exclusive, live, resilient compound. It is the *only* Picker that's been tried and proved tough enough to take the *constant* pounding of modern high-speed looms, hike-up production, and cut picker costs by as much as 50%. With these lighter-in-color, even smoother, tougher, and stronger DeLuxe Daytons, jerked-in fillings are reduced to a minimum and your looms can be more uniformly boxed.

THE DAYTON RUBBER MFG. CO.
Dayton, Ohio - - Waynesville, N. C.

Dayton Loom Supplies are protected by U. S. Patents issued or pending.

THE THOROBRED LOOP PICKER

New flared bottom ...rounded corners on front of picker ... molded by new method to eliminate roughness. Keeps its shape and "stays put" on the stick. Has proper cushion. Easy to install. Proved long life and greater economy.



THE THOROBRED LUG STRAPS

Freedom from adjustment ... constant power maintenance ... assures increased production at lower costs. Thorobred Lug Straps have extra strength ... proper cushion ... desired resilience ... and the ability to absorb shock. Never require adjustment and have long, trouble-free life.

ASK YOUR NEAREST DISTRIBUTOR
FOR MILL SERVICE PROOF
OF DAYTON'S OVERWHELMING ADVANTAGES

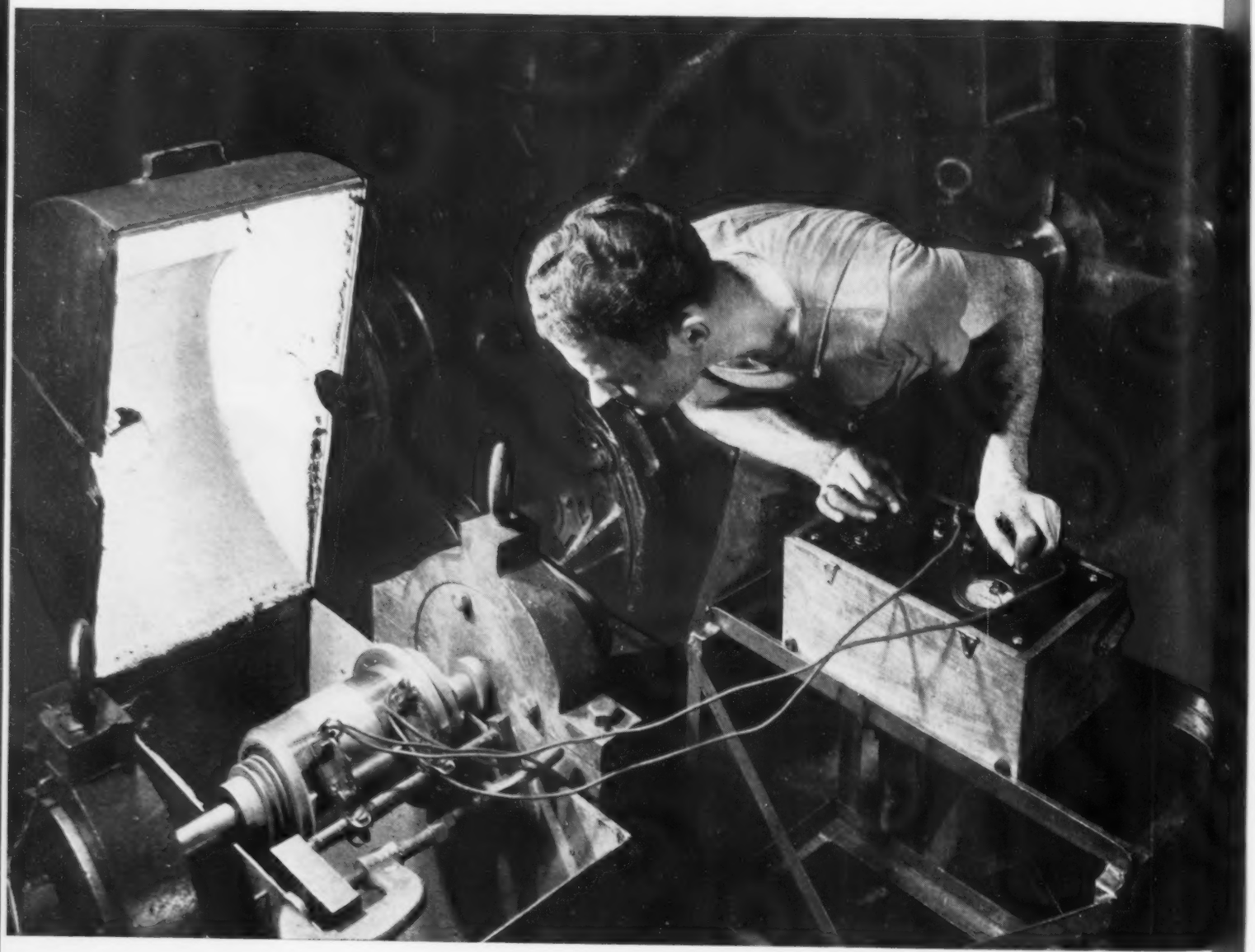
GREENVILLE BELTING CO.....Greenville, S.C.
GREENVILLE TEXTILE SUPPLY CO., Greenville, S.C.
ODELL MILL SUPPLY CO.....Greensboro, N.C.
THE TEXTILE MILL SUPPLY CO.....Charlotte, N.C.
INDUSTRIAL SUPPLIES, Inc.....LaGrange, Ga.
YOUNG & VANN.....Birmingham, Ala.
TEXTILE SUPPLY CO.....Dallas, Texas
AMERICAN SUPPLY CO.....Providence, R.I.
PROVIDENCE MILL SUPPLY CO.....Providence, R.I.
F. L. HERVEY CO.....Fall River, Mass.

EXPORT DIVISION
DAYTON RUBBER EXPORT CORP.
38 Pearl Street, New York, N. Y., U. S. A.

CANADIAN REPRESENTATIVES
ROSS WHITEHEAD & CO., Ltd.....Montreal, Quebec

Dayton
Thorobred TEXTILE PRODUCTS
LOOM SUPPLIES-Dayco ROLL COVERINGS
Made by the World's Largest Manufacturer of V-Belts
Copyright, 1942, The Dayton Rubber Manufacturing Co.

use this 4-way service



When you request copies of Maintenance Hints, your name will automatically be placed on our mailing list to receive Maintenance News.

FREE

HINTS ON HOW TO MAINTAIN ELECTRICAL EQUIPMENT

Continuous production depends on proper maintenance. This book will help. Thousands of maintenance men are already using it. Gives timely tips on the care and maintenance of electrical equipment. Published in two volumes. You can have both. Vol. I is wire-bound. Vol. II is loose-leaf so additional booklets can be added as released.

Fill in the coupon now and mail it today. When we receive your request your name will automatically be placed on our mailing list to receive Westinghouse Maintenance News—another free publication for maintenance men, issued periodically to give latest news on maintenance methods.

Westinghouse Elec. & Mfg. Co.
East Pittsburgh, Pa., Dept. 7-N
Maintenance Sales Dept.:

Please forward copies of Maintenance Hints, Vol. I and Vol. II, and place my name on your mailing list to receive both the regular Maintenance Hints bulletins and Maintenance News.

Name _____

Title _____

Company _____

Address _____

City _____ State _____

to keep your machines on the job

1 **Renewal Parts Warehouses**
17 warehouses conveniently located throughout the country now carry an adequate stock of frequently used renewal parts.

2 **District Repair Service**
33 manufacturing and repair plants are strategically located to speed repair service.

3 **District Engineering Service**
Experienced engineers in every industrial district are available to help solve production problems.

4 **Free Help for Maintenance Men**
Valuable information on how to keep electrical equipment on the job.

With Victory in the production line, the most important job today is to keep present equipment running at full capacity. To do this calls for better maintenance, for quick replacement of worn parts, for speedy repair work when necessary. To help you get longer life from your electrical equipment, Westinghouse is prepared to help you in these four ways:

First Westinghouse has established 17 warehouses where you can obtain renewal parts quickly. Stocks on hand include those parts normally subjected to wear or burning such as contact tips, shunts, arc chutes, operating coils, armature and field coils, bearings, etc. Be sure your own stock of renewal parts is adequate to meet emergencies. When it runs low order direct from our local office.

Second Westinghouse has arranged to facilitate major repair work. In addition to the 17 parts warehouses, Westinghouse has established 33 district manufacturing and repair plants. Each of these plants is equipped to repair, remodel or recondition electrical apparatus. This includes rewinding motors, generators and transformers; replacing or building up worn parts such as bearings, commutators and current collectors; reblade and reline turbines, or remodel them for other operations.

More than 4,000 employes are now serving our customers from these 33 Westinghouse district plants alone. To save time on repair service, call our local office.

Third Experienced engineers are available at every Westinghouse office to help you with your electrical and production problems. These men are constantly working with plant engineers in all types of industries. Problems that occur once in the lifetime of a manufacturer are often daily occurrences with our engineers. Thus, problems solved in one plant provide a quick answer to similar problems elsewhere. Maybe these men can help you, too.

Fourth One of the most important single group of workers in your plant is your maintenance crew. These men deserve all the help you can give them.

Westinghouse has prepared a valuable book on the care and maintenance of electrical equipment. Pocket-size, it gives helpful hints on the care of linestarters, bearing lubrication and maintenance, tips on general inspection and many other suggestions on how to keep electrical equipment on the job.

"Maintenance Hints" is free. Each of your maintenance men should have a copy. To be sure they get one, fill in the coupon now and mail today.

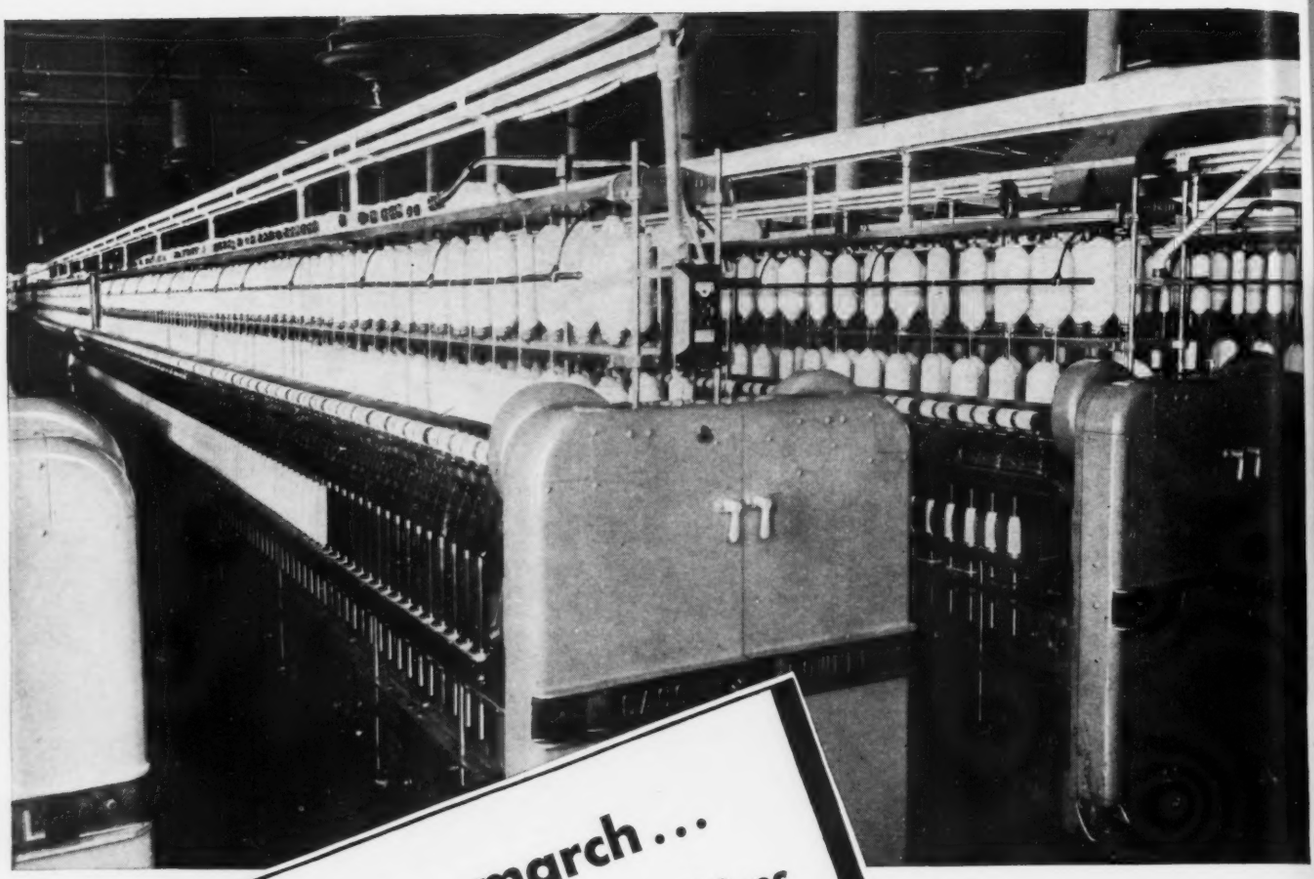
All of the above services are available through our local office. A phone call will bring you any one or all of them.

Westinghouse Electric & Manufacturing Company
East Pittsburgh, Pa.

J-94489

Westinghouse

TIME SAVER FOR AMERICAN INDUSTRY



Built by
SACO-LOWELL SHOPS

Textiles on the march . . . come from SKF-equipped machines

Next time you see a regiment swinging down the street or rolling across the country in canvas-canopied trucks, think of the vast quantity of cloth consumed by the armed forces of America. Think of the army of machines required to make this cloth, and you'll think of spinning frames. On the spinning frames that produce an even strong yarn at a low cost per pound, you'll find SKF Bearings on cylinders allowing for shaft deflections caused by settling floors . . . on spindle bolsters for uniform operating speeds at low power and lubrication costs. To use anything but SKF's is to take a chance on letdowns and shutdowns resulting from bearing trouble.

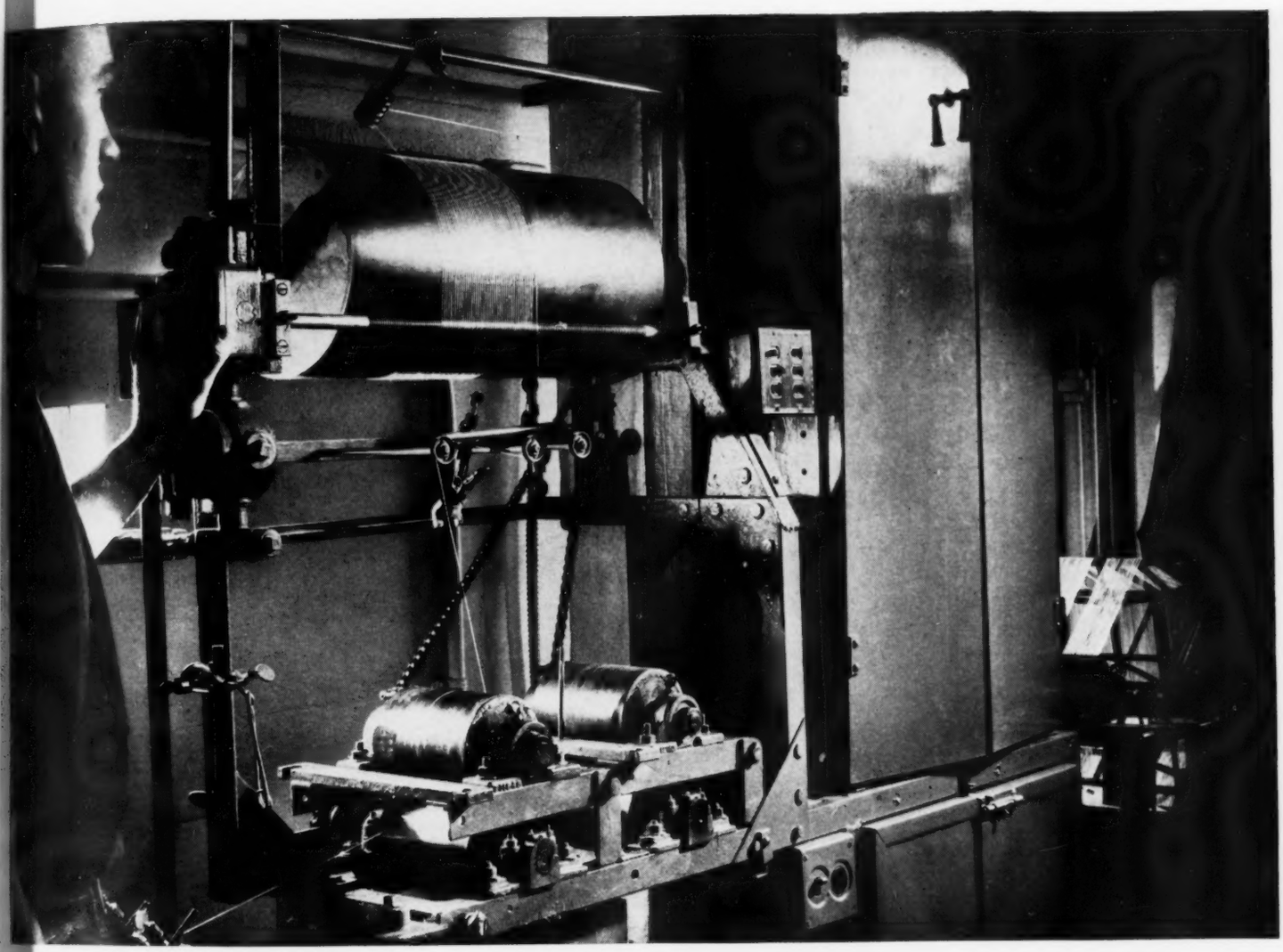
5081

SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA.

SKF

BALL AND ROLLER BEARINGS

We couldn't buy it—
so we built it!



YARN SLASHER — When it was found that no standard laboratory yarn slasher was available, our laboratory research men devised this ingenious machine which closely approximates textile mill equipment. This machine is used in sizing, coating, impregnating and finishing yarns. Through precise control of time, tension, temperature, and drying rate, mill results are obtained under laboratory conditions. Although the photograph shows the yarn being can dried, the equipment may be converted for use as an air dryer. After treatment and drying, the yarn is automatically wound in skeins on the frames at extreme right.

WHAT IS YOUR PROBLEM? Is it a question of yarn sizing, dye penetration, gray goods desizing, or fabric finishing? Whatever the problem, the Rohm & Haas Sales Service Laboratory is prepared to offer its suggestions.

In this modern and complete textile laboratory there is a specialized piece of equipment for testing and checking every plant operation. If a standard laboratory machine is not on the market, our technicians have designed equipment to accomplish the desired result.

Tell us about your problem and the wheels of this miniature textile plant will begin turning in search of a satisfactory solution.

TRITONS—*Synthetic detergents, emulsifying, wetting, and dispersing agents.*

RHOTEXES—*Synthetic gums for sizing and thickening.*

DEGOMMAS—*Concentrated diastatic and proteolytic enzymes for desizing.*

RHOPLEXES—*Aqueous resin dispersions for finishing and coating fabrics.*

RHONITES—*Modified urea formaldehyde resins for textile finishing.*

PROTOLIN—*Stripping agent for wool stock and piece goods.*

FORMOPON—*Reducing and stripping agent in acid systems.*

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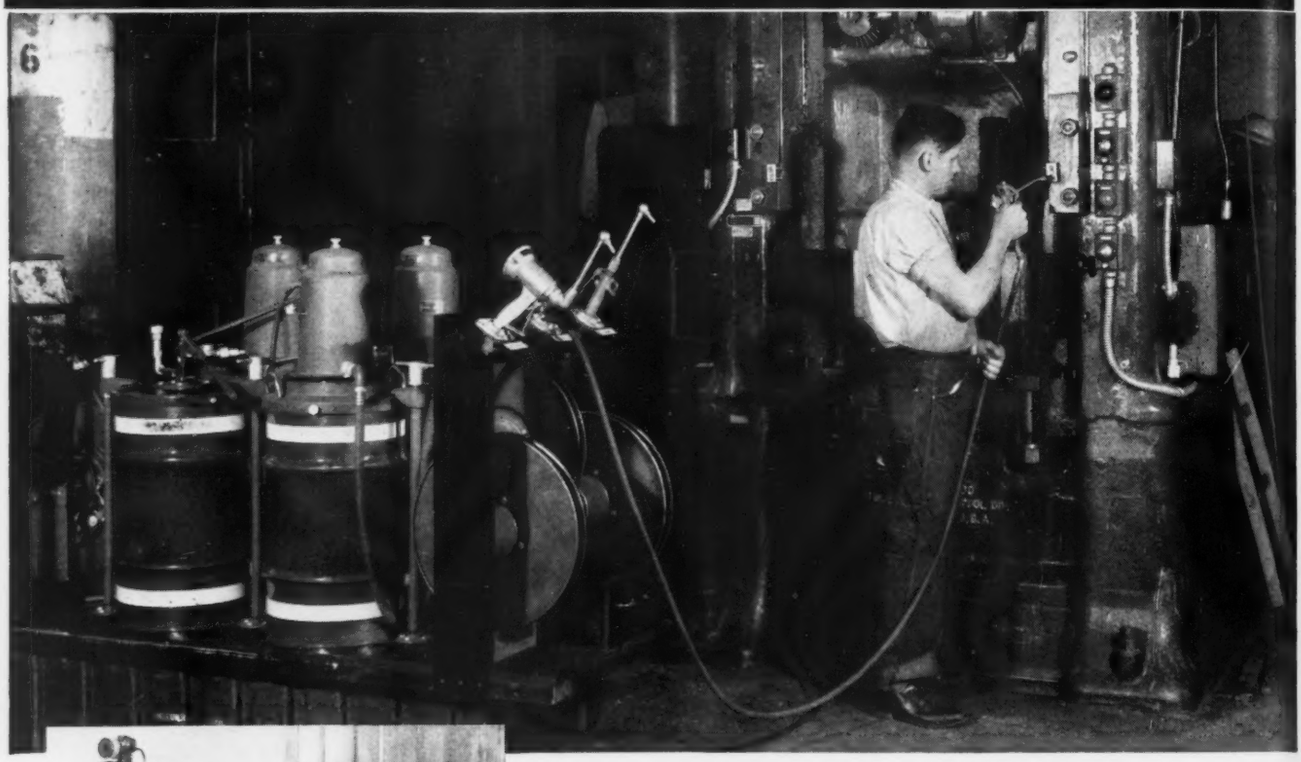

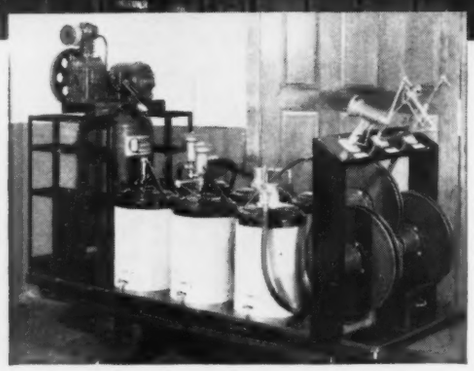

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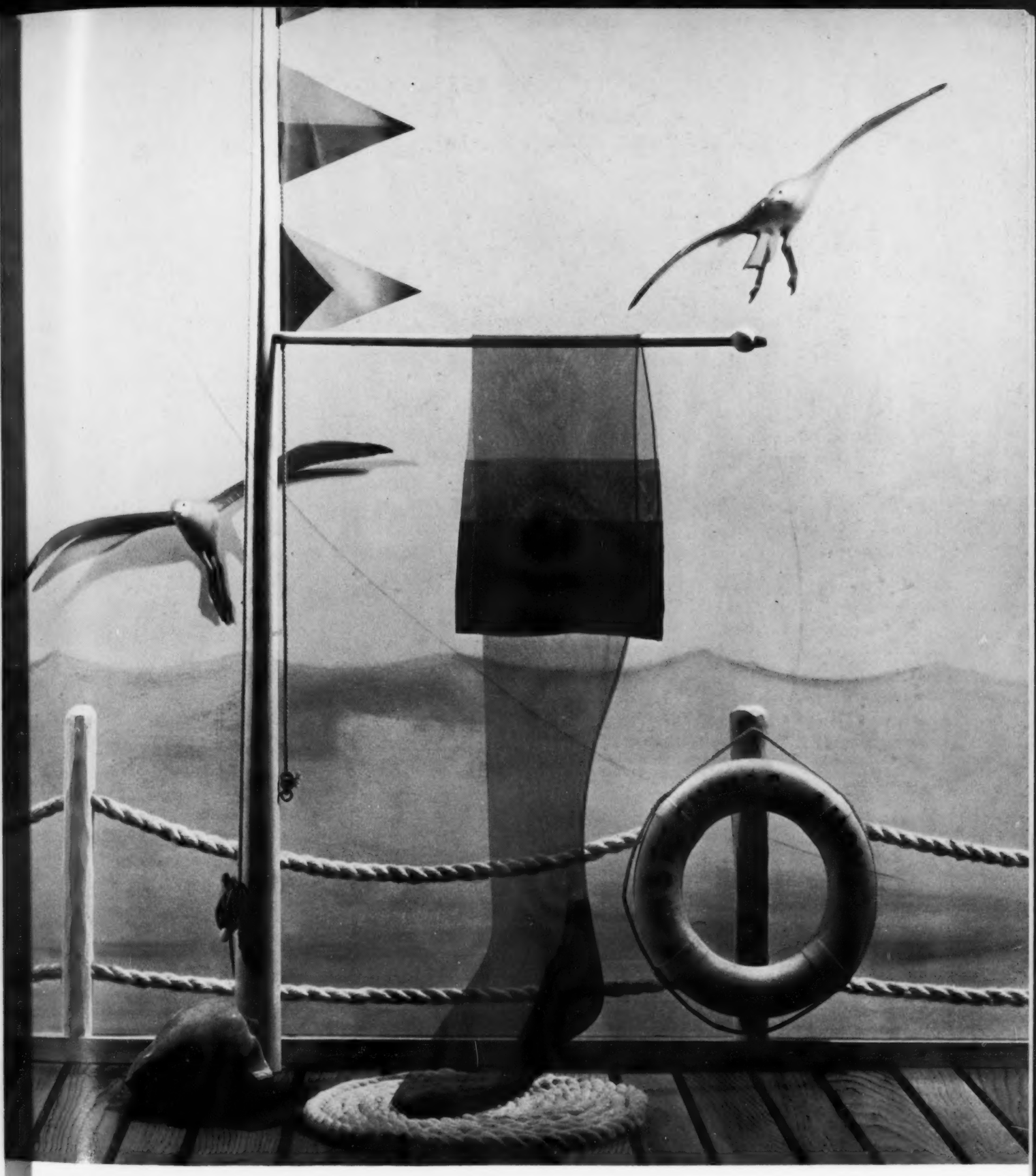

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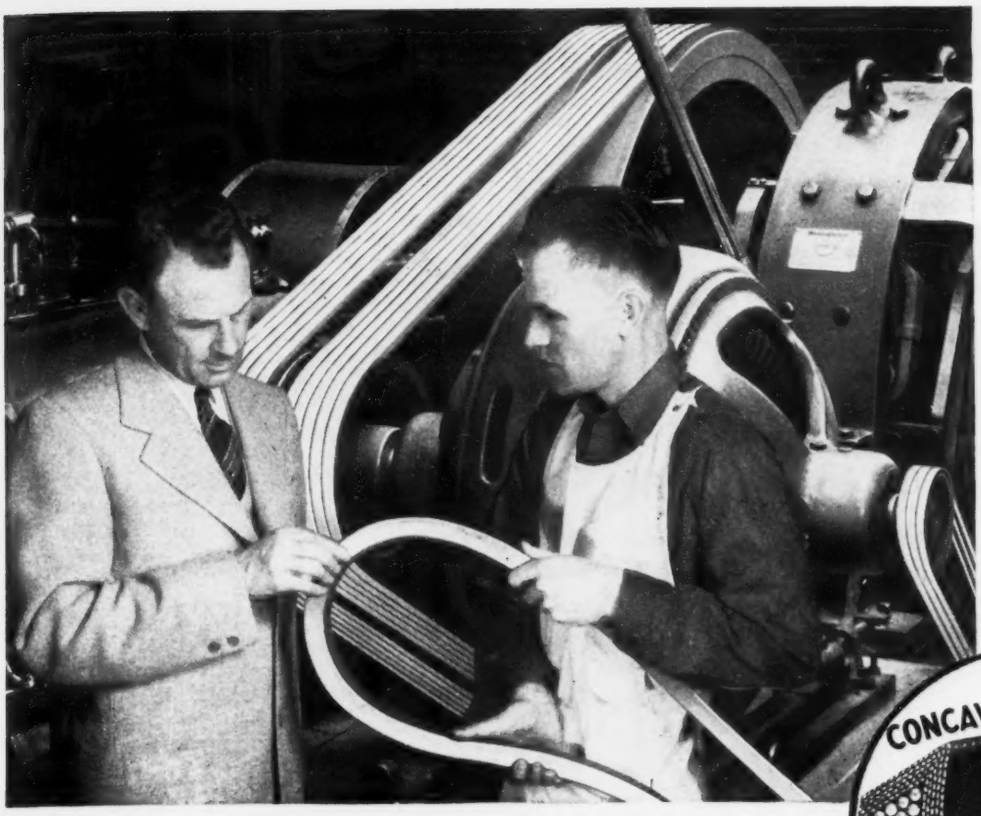

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What Happens When a V-Belt Bends

FIG. 1

FIG. 2

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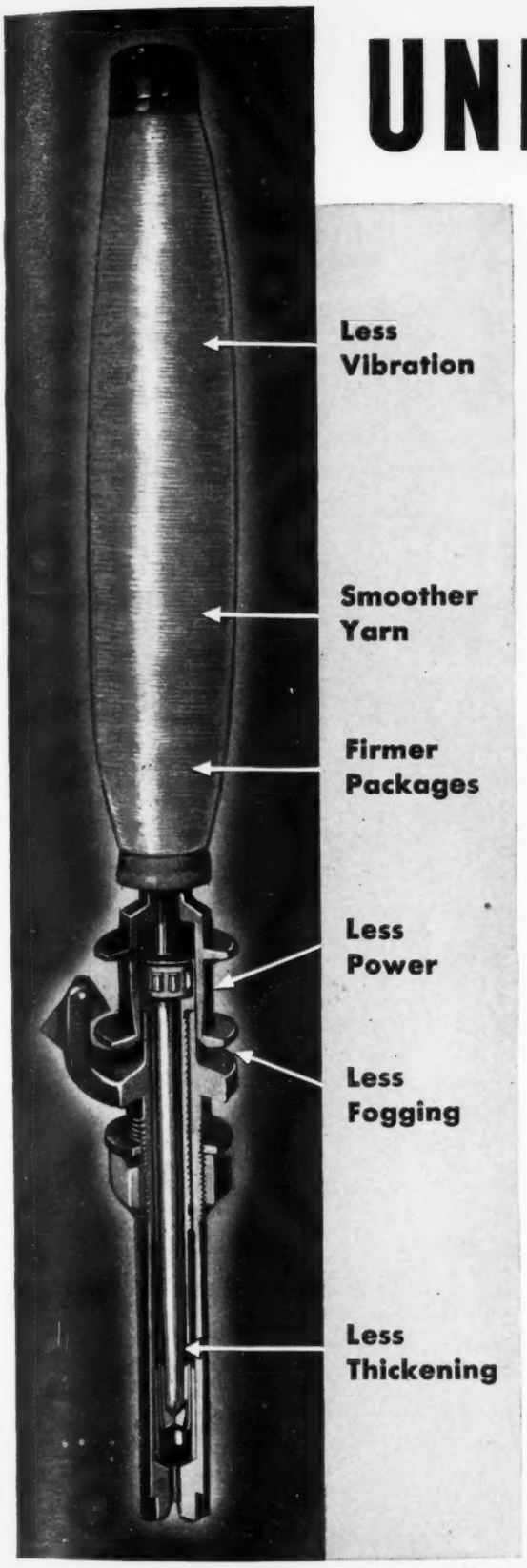
When TEXTILE WORLD's editorial staff got together recently for its spring conference the adjacent photograph was taken. Douglas G. Woolf, editor, is seated at his desk. The staff (left to right) includes: Harold E. Reed, assistant editor; Thomas O. Ott, Jr., southern editor; William B. Dall, managing editor; Cortland G. Smith, art director; Blaine Stubblefield, Washington correspondent; Earle Mauldin, southern editor; Winn W. Chase, technical editor. H. S. Knowlton, New England editor, was not present.

UNIFORM YARN



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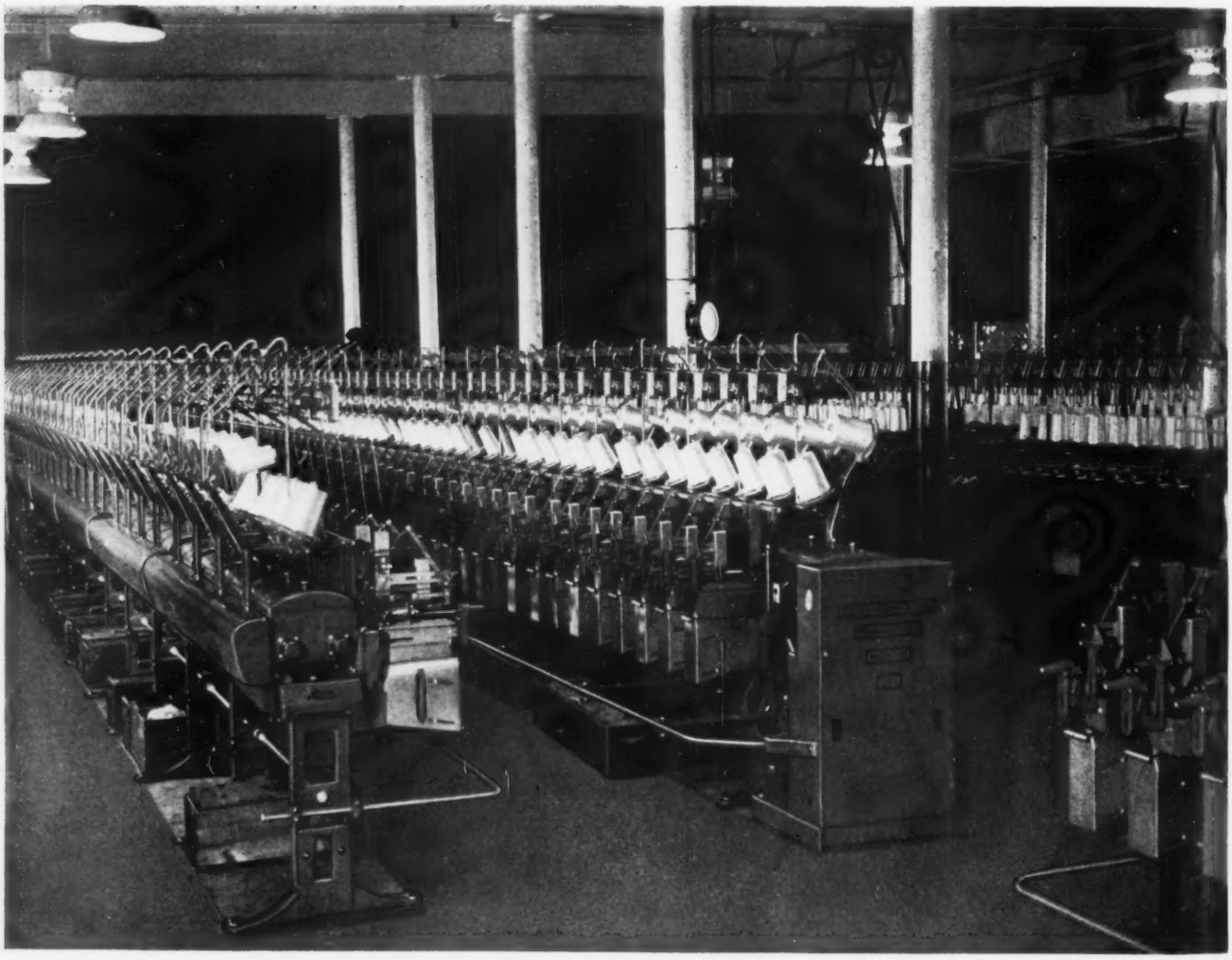

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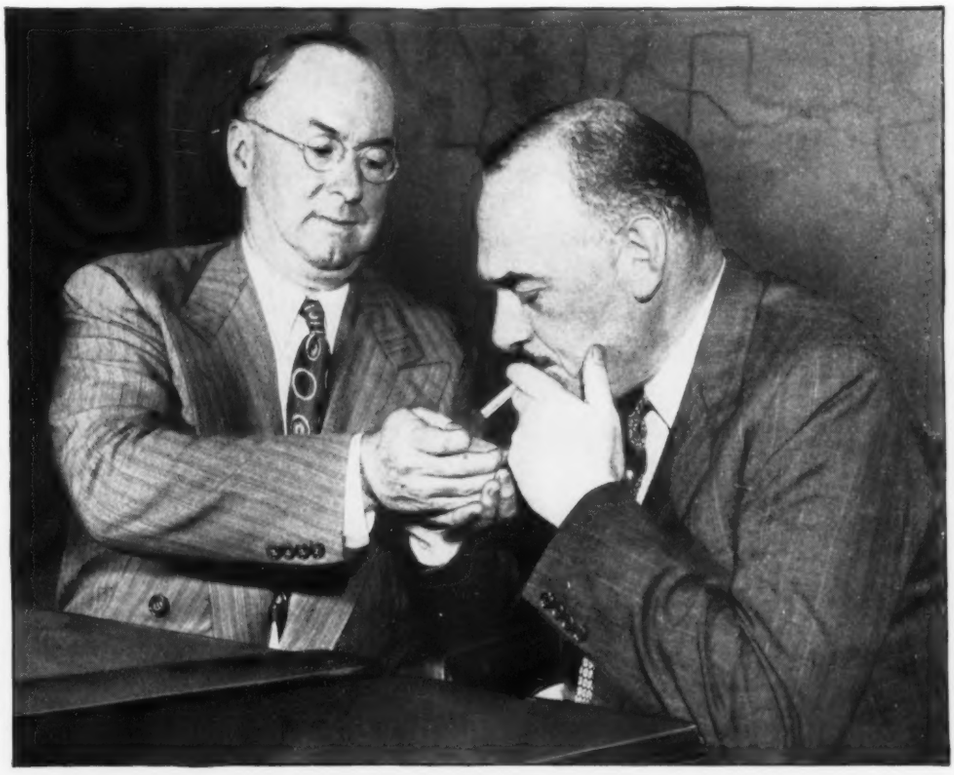


Two men who know the story best: Donald Nelson, Chief of the U. S. War Production Board, and (right) Oliver Lyttelton, Great Britain's Minister of Production.

BETWEEN THE LINES of today's war news is written a story that is even more vital than the news itself. For through that story we begin to discern the pattern of victory, not yet complete in all its details but increasingly clear in its essentials.

It is the amazing story of how American industry has responded to the call for the weapons of total war, of how its technicians, workers, and managers are driving through an unprecedented task of fantastic size and complexity.

France fell in June 1940. During that month this country produced about $150,000,000 in war goods. By June 1941 the Nazis had overrun the Balkans; and in that month our war production was $800,000,000. The fateful month of December 1941 gave us an output of $1,800,000,000—an increase better than tenfold in eighteen months. And in May 1942 our total expenditures for war equipment and supplies mounted to the staggering total of $3,500,000,000.

This is an increase of twentyfold within two years, of itself a stupendous industrial achievement. But what is even more important, that achievement already is making itself felt the world over—in the Orient, in Australia, in Libya, in Europe, in the Coral Sea, at Midway Island, at the Aleutians, and wherever else we find a battlefront manned by free men.

To accomplish it, many industries have been pouring out war materials at a rate that only six months ago did not seem even remotely possible. Starting from scratch, our factories have turned from their peacetime jobs, first to meet and then to surpass the most hopeful estimates of what might be expected of them.

To do this they have drawn heavily upon all of their resources. Their skilled and unskilled

man-power has thrown into the task a war-born will to work; their research staffs have bent to it all of their scientific resources; their engineers have applied to it their utmost ingenuity; their executives have devoted to it the full measure of that managerial skill which has won for American industry the respect of the modern world.

For the first time in history we have pushed the accelerator of the world's greatest engine of mass production down to the floorboard. Always in times of peace, factory men have had to gear production to what the markets would take. But now the market they are called upon to serve is hungry for the last ounce of potential output. For war confronts industry with a demand limited only by its capacity to produce.

During these feverish months, while a desperate world has watched breathlessly to see how American industry would perform as the arsenal of democracy, we of McGraw-Hill have followed with mounting pride — at times almost with wonder — a new miracle of industrial achievement.

Some day the full story of this American industrial effort will fill a brilliant chapter in the epic history of our times. Meanwhile it would be premature to celebrate the completion of this task. For victory has not yet been won; that still lies at the far end of a road that we may find to be long and arduous.

But even now we can be certain of one essential of that victory. American industry is doing its job; it is delivering all that the people have asked of it — and more.

As I have watched with my associates the unfolding of this picture, I have wished that it were possible to broadcast it, in full color and wealth of detail, to the people of America, so that they could understand at least, in part, the job their industry is doing for them. It would help, it seemed to me, if the men of industry themselves, each so intent on his own task, knew what their fellow-workers in other fields have been doing.

However, the managers of industry have been far too busy *doing* to talk. They are going to be just as busy for some time to come. Naturally, many details are yet to be spread upon the record and, indeed, the full story cannot be told. But that part of the story that can be told is well worth the telling and the hearing, if only for its revelation of the spirit of an awakened America, throwing its all into the fight against the tyranny that has brought so many of the world's little people under its heel.

The 1941 war production of the United Nations, exclusive of the United States, equalled the total 1941 war output of Germany with all of its captive plants and enslaved labor. Since Germany's 1941 operations were at maximum capacity no further increase is possible. British output has been expanding to the point where its 1942 production is considerably ahead of Germany's.

In May 1942 American war production passed the British output 50 days ahead of schedule. In 1943 it will be 3 times that of the British.

This has been brought about under the leadership of Donald Nelson and the War Production Board, the Army, the Navy, the Maritime Commission, with the cooperation of management and labor. It has been furthered by the cooperation of Oliver Lyttelton, British Minister of Production, and other British production authorities.

But the story goes far beyond that. It gives us a glimpse of the America as it will emerge from this war, its industries again setting world standards of production, which will become the spearhead of our post-war economy.

This is a story that cannot be adequately told in generalities. It must be told in some detail. For instance, the great accomplishments of the machine tool industry, the great forward strides made by the aviation industry, the tremendous achievements of the chemical industry, the amazing conversion of many industries will warm the hearts of Americans.

These aspects of the subject deserve the fullest treatment and will be told month by month in these pages until the story has been completely unfolded. We will try to give a concise overall picture of the war job that industry has done and still is doing. You will find it a thoroughly American story of high American achievement in which every American can take pride and from which every American can take hope for the future of his country.

The story is far too significant to be withheld any longer.

James H. McGraw, Jr.

President, McGraw-Hill Publishing Company, Inc.

This message is appearing in all McGraw-Hill industrial and business publications, reaching over a million readers.

TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

Two Things to Do

AS WE PASS the half-year mark of 1942—possibly the most crucial mile-stone in the history of this nation and of the American textile industry—it is time to take stock again. It is also time—and in fact belatedly so—to be completely realistic about the trends which this inventory will reveal.

Just as the "short-war" dreamers have at last awakened to the cold gray dawn, via Tobruk, Sevastopol, Amagansett, L. I., Jacksonville, Fla., the Aleutians and points North, South, East and West, so the "new-found prosperity" dreamers in business and industry and labor must awake to their own dawn of realization, via priorities, and shortages, and decreased purchasing-power, and taxes, and higher costs, and frozen prices.

Here, briefly, is the textile situation: The textile-production curve has just completed three and a half years of successive records. Of that period, a year and a half was the result of, first, anticipation, and then the certainty, of the European war, with its resulting demand for all essential products. The next year and a half was our own national-defense binge, when it seemed that war, remote from our shores, was the answer to industry's prayer. The last half-year, of the three and a half record-breaking years, was post-Pearl Harbor.

The lesson of that last half-year is the one that must be learned, because the trends of those months will be intensified in the months and years to come. That lesson —again, briefly—is that a record over-all consumption of textile fibers is no guarantee, per se, of over-all textile prosperity. On the contrary, there are many manufacturers, selling-agents, promotion directors, salesmen, employees, who have been facing during the last half-year—and who will face still more in the future—the extinction of the market for their products and services.

That statement may sound harsh, and unduly pessimistic. As a matter of fact, its only error is one of under-statement.

GIVEN THAT SET OF FACTS, and they are facts, what can the textile industry do about them?

First of all, it can go all-out down the path of plant-conversion. Any company which has not yet adjusted its product to the possibility of filling a war or essential-industrial demand—no matter how remote it may seem—should do so at once.

The demand from those sources has not yet reached its peak. Note the statement in the joint WPB-OPA survey of the cotton-textile industry that, whereas in 1941 military use of cotton goods was about 20% of the total production of 10,500,000,000 linear yd., it will exceed 50% of the estimated 12,000,000,000 yd. to be produced in 1942!

Second, the textile industry can go all-out down the path of research. Any company which is not devoting a good part of its executive thinking to possible permanent changes in its product and procedure is inviting disaster by default.

The face of the textile industry is going to be completely lifted during the next five or ten years. Drastic changes have been brewing under the surface for the last 25 years, but they might have taken another quarter-century or even a half-century for maturity. The war has stepped up the tempo of those changes immeasurably. The necessity of doing without this or that piece of equipment, or without this or that raw-material, has forced American ingenuity to get to work at substitutes. When the shooting is all over, many of those substitutes will be established in their own right, and many of the things they substituted will be on the outside looking in. Anyone who thinks that the end of the war will automatically mean the return of status quo is due for a rude awakening.

THE TWO BROAD STEPS suggested above—going all-out down the path of plant-conversion and going all-out down the path of research—will win, respectively, both the war and the peace. Of the two programs, that of research is the more difficult one, and the one most likely to be neglected. At the same time, its neglect would be fatal to many units in the industry.

Fortunately there is now leadership in this field. The Textile Research War Council, sponsored by the Textile Research Institute and the Textile Foundation and with the participation of all the leading textile associations, is geared up to tackle promptly and effectively the technical and economic problems arising out of the war effort. Its activities will have a lasting effect upon the future of the industry, after the war.

Two things to do! Together they form a full-time job for the chief-executive of every company, immediately.

THE EDITOR SAYS

A Salute to The Quartermaster Corps

If any textile manufacturer needs assurance that his particular stake in this war is being administered efficiently, we suggest a trip to the Philadelphia QM depot. We have no authority to issue such an invitation, but we suspect that the Depot would be able to take interested visitors in their stride.

To this writer, the Philadelphia Depot spells efficiency. It has none of the mustiness which is sometimes associated with Governmental departments. It clicks, from the time a visitor gets his pass at the gate until the time he relinquishes it on his way out.

The spirit which governs the activities of the Philadelphia Depot is of course a reflex of the intelligent direction of the office of the Quartermaster General in Washington under General Gregory, whose statement to the industry through TEXTILE WORLD appears in this issue. He and General Corbin—and other officers in the Quartermaster Corps in Washington, and General McCain and other officers in Philadelphia, and QM representatives throughout the field, are making this gigantic task of clothing and equipping the greatest American Army in history as painless and efficient as any such undertaking can be.

Joe Is Here!

That smell you may have noticed lately is not sewer-gas. It is the stench of the lies of Dr. Joseph Paul Goebbels.

For Joe is here. He is causing sane Americans to repeat "in confidence" that England is storing up men and material in her litt'e island to save her own insular skin; that she is willing to fight to the last American; that Churchill is through.

These British people whom Goebbels is trying to befoul are the same men, women and children who stood up to Hitler's Hell when no other nation could stand against him, and who crawled out of their devastated homes with thumbs up and with glory in their souls. This man Churchill is the same man who picked up the pieces left by Chamberlain and his ilk after Munich and Dunkirk, and welded them into the most courageous England the world has ever known.

But maybe we can learn from Joe. Maybe we can learn that the only antidote to lies is truth. For every lie spread by Goebbels' Fifth Columnists here, let Elmer Davis in his new capacity release two truths, no matter how unpalatable. Let the people know the worst.

Then Joe would not be here long.

Baby Carriages, Funerals, Expectant Mothers, Shirt-Tails

If you should start to get critical of OPA and WPB—and who doesn't or hasn't or won't?—give a thought to some of their worries. Here are a few choice bits from releases which have come over this writer's desk recently:

✦ "Charges for funeral services must conform to ceilings established by the General Maximum Price Regulation, Leon Henderson, Price Administrator, stated today. . . . Charges by the mortician for embalming, the use of hearse and limousine, and the supplying of professional pallbearers and similar services and facilities all come under the universal price ceiling. . . ."

✦ "The War Production Board issued an order yesterday that permits continued production of baby carriages but requires that they contain none of the more critical metals and only a minimum of iron and steel. . . . Baby carriages are divided into three groups. . . . Group I carriages meaning a coach or carriage designed for a young baby. . . . Group II carriage meaning a stroller intended for an older baby, usually a baby able to sit up. . . . Group III carriage meaning a baby walker. . . ."

✦ "The use of additional elastic fabric in surgical type corsets is permitted for the benefit of expectant mothers, physically disabled persons, and persons having sagging muscles, by Amendment No. 1 to Limitation Order L-90."

✦ "Simplification measures to produce more shirts out of less cloth were discussed at a meeting of the Shirt Manufacturers Industry Advisory Committee with War Production Board clothing and textile officials here today. . . . Measures discussed included shortening the length of shirts, eliminating French cuffs, eliminating pockets on regular shirts and leaving only one pocket on a sport shirt, eliminating yokes and fancy backs in sports shirts, restricting the length of collar points, and reducing the number of buttons on a shirt. . . ."

And *so*, if Leon Henderson seems sort of strange to you, as he apparently does to certain Congressmen—and if some of your WPB contacts start plucking at the air vaguely with their fingers as you confer with them, just remember that they may not be completely crazy but that they are probably trying to figure out how much cloth and/or metal should be issued to the husband of an expectant mother whose uncle recently died and needed professional pallbearers, and whose older child is in the Group III carriage class, "meaning a baby walker," and whose sister has sagging muscles, and whose husband—to come back to the hero of this tale—is in imminent danger of losing an inch off his shirt-tale (Correction: tail.)

And then try to figure out how silly *you* would look to your friends if *you* had a job in Washington.

Moral: From cradle to grave, via blessed events and flabby muscles, Leon will get you if you don't watch out!

The Truman Phobia

The Guthrie incident has run its course. There are now three reports on the table. Two of them—that of the Faddis sub-committee of the House Military Affairs Committee, and that of the War Production Board, repudiate Guthrie's charges. The third, that of the Senate Truman Committee, substantiates those charges. That the latter was a foregone conclusion was evident to this writer as he listened to the hearings. The Truman committee apparently was not interested in evaluating the validity of the Guthrie charges. It apparently was interested only in establishing its pet thesis: the criminology of the dollar-a-year man.

Let's put a few *facts* on the record:

1. The duck-conversion program, snorted at by the Truman report, was and is one of the best examples of industry cooperation extant. We proved that previously in these columns.

2. The wool manufacturing industry, critized in the report, actually is ahead of schedule in meeting war demands.

3. Philip Reed, of G. E., who was belittled by the report, has done a swell job in directing the industry branches.

More than all this, the Truman report ignores the fact that the WPB, under the direction of Donald Nelson, has accomplished the greatest miracle of all industrial history. Today, the performance record of WPB stands as the greatest assurance that the Axis will be beaten.

Against that latter fact, what does the phobia of the Truman committee matter?

Washington in a Hush-Hush Stage

On rubber, et al, it is handling Americans, like lily-livered pups

By DOUGLAS G. WOOLF

WASHINGTON, having run the gamut of the emotions since Pearl Harbor, is now trying some of them over again. Particularly, it is in a second or third hush-hush stage. Not hush-hush about good news; that is being fed out consistently to a supposedly puerile citizenry. But hush-hush about some of the basically bad news. Specifically, rubber.

Now it is true that the words that have been written and said in the National Capital about the acute rubber shortage, if laid end to end, would reach from here to Mars and back, and would have enough surplus to bounce like a cosmic rubber ball sharply into the faces of the speakers and the writers. But two things have been omitted: statistics and action.

First, as to statistics: This writer, as one of a group of editors at a series of conferences in Washington, was given the figures, off the record. They should be on the record. They should be printed in at least 12 pt. type in every newspaper in the country so that every man, woman and child in the country could understand just what this rubber shortage means to the war effort—and particularly what it means to the safety of every mother's son now in the armed services, or soon to be so engaged.

If that meaning could be made clear, no person in this country would *dare* to run his car for anything except an essential purpose. He'd be subject to ostracism, or worse.

Second, as to action: It is evident to any thinking individual that the proposal to extend the "gas" rationing to the country as a whole is primarily for the purpose of conserving rubber. It *has* conserved rubber on the eastern seaboard, bootlegging and selfishness to the contrary notwithstanding. *So*, what are we waiting on?

Not on authority, certainly. If this observer, barren though he is of legal training, knows anything at all, it is that there are enough emergency powers in our war-time set-up to enable the Federal Government to do what it wants to do on this rubber problem—without benefit of legislation.

So, again, what are we waiting on? First, on the political exigencies of the situation, whereby a Congressman from an inland State can get headlines and throw a political scare into the Administration. Second, on the resentment of a large part of the citizenry, who actually would walk from here to hell and back to save the life of one American boy on the battle-front, but who have been given the hush-hush treatment on actual statistical fact. If those same citizens were given the real dope there would then be no bootlegging of gas. There would be no necessity of taking the rubber-tread off tanks, thus reducing their efficiency by 10 or 15%. There would be no necessity of sending our boys into battle with weapons and equipment made less effective by substitution of other materials for rubber.

The next move is up to Washington.

We have wasted six months since Pearl Harbor. Thousands of our boys have been killed in that half-year. What are we waiting on, now?

THIS HUSH-HUSH attitude extends beyond rubber. It extends to the entire information-service in Washington. It started right after Pearl Harbor. In fact, today, six months after Pearl Harbor, 99-odd percent of the people of the country still don't realize the beating we took there. And why not? Certainly the Japs, with their exact blue-prints, know it. Are the American people so soft that they must be saved from the knowledge that our enemies themselves possess?

And, subsequently, we have had spread-eagle reports of American victories. First,' there were head-lines about enemy ships lost, even if they were only glorified row-boats carrying Japanese troops. Then instead of hard-boiled communiques regarding real victories, we were fed flamboyant statements that Pearl Harbor was now avenged. Granted that the Coral Sea and Midway battles have been victories on our side, and granted that we have hurt the Jap navy more than Japan has hurt ours, it still remains that the Japs beat us to the gun; that they have captured bases which make our military job, to be done, a heroic one; that they have a toe-hold practically on our continent; that they will stop at nothing to save face; and that we still have ahead of us the probability of land, sea and air attacks on our own cities, on both coasts. If the people are conditioned merely for good news, how are they going to be able to take the bad news as it comes?

IN VIEW OF ALL OF THIS, do we *have* to have hero-worship and surprise ceremonies in Washington, in order to make Mr. & Mrs. John Q. Citizen buy bonds and go all-out for war? Wouldn't it be better for Mr. & Mrs. John Q.—and particularly for the heroes themselves—if the men who have won our victories (still relatively few in strategic importance compared with Pearl Harbor and Bataan) were allowed to remain at the front, and win still more victories, instead of being forced to submit to parades and halting speeches at the microphone, certainly more terrifying than fighting the enemy?

Is this a new technique of war? So far as we can recall, Eddie Rickenbacker wasn't summoned home between his repeated accomplishments in the last world war, in order to assure a lot of assumed lily-livered pups of Americans that they had nothing to worry about.

And, so far as we know, the Americans of 1942 aren't lily-livered pups either. They don't *have* to bring back their heroes from active service on the battleline in order to become convinced that their war bonds are a good investment. They don't *have* to drink pap out of a bottle. Just let somebody tell them convincingly—more loudly than all the still-extant appeasers and the politicians shout—that they're in a war to the death, and that they'll probably lose their shirts, and their homes, and their cash, and many of their loved ones, before there is any assurance that Schenectady or Charlotte or San Francisco or Oshkosh will not get wiped off the map just as did the Czech town of Lidice.

Just tell them that, Washington! Forget your hush-hush about bad news! Feed 'em strong meat! And then wait for the mince-meat they leave of Hitler and Hirohito!

Textile Cooperation Outstanding

A Statement by MAJ. GEN. EDMUND B. GREGORY, Army Quartermaster General, to the Readers of TEXTILE WORLD

AT THE PRESENT TIME the Quartermaster Corps is in good position with reference to the procurement of textiles. Increasing quantities of fabrics of all types have been offered the Government since Dec. 7 as rapidly as the mills could change over or convert machinery to War Work. Cooperation of the industry during this period has been outstanding.

Procurement of wool textiles is abreast of actual requirements.

Today, in the hands of growers, dealers and manufacturers, there is a greater stockpile of wool for military requirements than at any time since the beginning of the emergency. This is due to the fact that substantial imports have been and are still coming in from Australia, South America, and Africa. As long as our assets of wool continue in this position, no major changes are contemplated in the wool content of military fabrics. However, if changing conditions should result in an appreciable tightening of the wool situation, it would be possible, though not desirable, to adopt part-wool military fabrics. A part-cotton blanket will be procured for use in barracks and in the zone of interior, reserving the 100% wool blankets for war theater operations. This change will effect a considerable saving of wool.

While a considerable yardage of textile fabrics, including both wool and cotton, have been procured for Lend-Lease or War Aid purposes, the quantities in relation to our own purchases have not been particularly large to date. War Aid requirements, however, can change suddenly in either direction and the chances are that the change will be upward.

Basic Army fabric specifications in use at the beginning of the war have proved very satisfactory, and no major changes are anticipated at this time. Fabrics delivered under these specifications have been of excellent quality, and results in the field have proved that the basic specifications were sound. Due to the shortage of manufacturing facilities in some instances, it has been necessary to authorize substitute fabrics in order to secure desired quantities within a given increment of time. Efforts are being made continually to standardize and simplify specifications where possible without injuring the quality of the goods. It is vital that clothing and equippage be made of the highest quality fabrics available as maintenance and replacement under combat conditions are difficult.

The shortage of vat dyestuffs for military requirements, apparent early last fall, has been alleviated by the combined efforts of the War Production Board and the Office of the Quartermaster General. Availability of vat dyestuffs has been increased greatly by the construction of additional manufacturing facilities and by eliminating these dyes from all but most essential fabrics.

The delivery of textiles by the end of the current calendar year will provide sufficient stocks to be made into uniforms to meet the requirements of the Army well into 1943, based on the present anticipated strength of the Army during that period. Known future procurements during the remainder of the present calendar year are not expected to be any greater than past procurements. However, the textile industry is urged to maintain, and, where practicable, to increase its present high rate of production on War Work in order to be ready for any eventuality.

Washington Notes on War Textiles

Burlap and osnaburg—Army Engineers announced they are out of the market, temporarily, for burlap bagging because they have their full requirement. This came as a surprise to many observers who recalled the recent rush to convert loomage to cotton bagging materials. Inquiry reveals that the Army either overestimated its sandbag needs or was unduly scared over the jute import situation. As it turned out, a way was found to bring jute out of India without exposing it to Jap subs in the Indian Ocean. We got a considerable quantity from South America, too—a good but slightly different kind. Apparently the crop bagging need isn't so serious as anticipated, either, and there is less alarm about osnaburg and sheeting. An enormous amount of grain is being handled in bulk this year. Army doesn't like cotton bags for sand.

Appropriations—Every new one is the world's biggest, but they attract less and less attention so freely do the borrowed billions flow. The latest is 42 billions for the Army in fiscal 1943. This includes $10,739,559,342 for pay, subsistence, clothing, etc., and there is no breakdown on the clothing, or anything else. The 1943 budget estimate for clothing was $366,000,000 but that probably was mere sundaschool change compared with the actual figure. One item of $11,000,000,000 is for the purchase of aviation equipment alone.

Funds for Clothing and Equipage

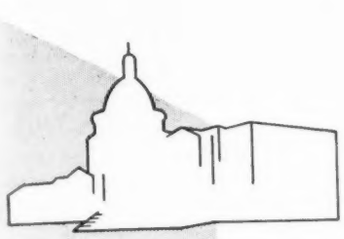
1940	$26,000,000
1941	672,350,000
1942	286,309,000
First supplement	443,123,000
Third	13,540,000
Fifth	1,525,764,000
Sixth	62,804,000
1943 Budget*	1,972,000,000
Total	5,001,890,000

Webbing—Plans are under way to substitute cotton duck temporarily for webbing in many items of soldiers' equipment. Webbing is even scarcer than duck. For two or three months, says the Quartermaster, duck will pinch hit for web in cartridge belts, waist belts, field bags, first aid packets, ammunition pouches, dispatch cases, and so on. Alternate specifications already have been drawn up. Ironically enough, industry had just developed what QM thought were the best web fabrics ever.

Duck Conversion—WPB's duck conversion program apparently has turned a critical situation into a satisfactory one. Maj. Gen. E. B. Gregory, Quartermaster General, testifying before appropriations committees on the 1943 Army Supply Bill, said that Army has already placed contracts for cotton duck to take care of all 1942 requirements, even if the Army should be increased to six or seven million men.

WPB Moves Toward Allocation

PRP is replacing priorities system on all production except capital goods



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By BLAINE STUBBLEFIELD

THE WAR PRODUCTION BOARD has moved three steps closer to complete control of all materials and supplies essential to prosecution of the war.

1. Under Priorities Regulation No. 11, nearly all companies using more than $5000 worth of basic metals per quarter year must file application under the Production Requirements Plan before June 30. PRP is in process of replacing all other preference aids in the field it covers. The metals referred to are given in the Priorities Regulation No. 11 Metals List.

2. The Allocation Classification System, recently promulgated, requires that explanatory symbols be placed upon all orders placed after July 1, and upon all previously-placed orders calling for delivery after July 31.

3. Beginning July 1, the form of application for and extending all preference ratings is standardized.

All three of these changes affect the textile mill operator and all three of them affect the manufacturer of textile machinery. Actually they are not three separate steps. They are merely three orders converging toward the same end. But it is convenient to discuss the subject under the three headings.

The Production Requirements Plan, instituted late last year, is the basic authorization to buy materials. It has no connection with capital goods requirements, like new machines, installations, buildings. It is a plan under which manufacturers make application for their production requirements.

Priorities Regulation No. 11 makes PRP the chief method of authorizing the purchase of materials. With few exceptions it is made mandatory for all concerns using $5000 worth of metal per quarter. Excepted are nine industries, or, more properly, services, such as transportation, communications, wholesaling and warehousing, and the like, which use only operating materials, do not fabricate materials for resale. WPB estimates that about 90% of the metals consumed by fabricators will be covered by PRP.

For the third quarter of this year, manufacturers are making application for supplies primarily upon one form: PD-25-A. This form is filled out as a specific application to buy materials during the third quarter—July, August, September. The manufacturer's estimate of what he needs is based on the previous quarter.

WPB has already obtained advance, overall information, from numerous large metal users on their requirements for the third quarter through the PD 275 Form. On the basis of that information, and on the basis of information given in each application, WPB will decide what each PD-25-A application gets.

How to Comply With Three New WPB Orders

I. TEXTILE MANUFACTURERS

1: Very few textile mills use $5,000 worth of metal per quarter and therefore were not required to apply for aid under Production Requirements Plan by June 30.

2: Textile mills may, however, make application. Some operators believe it would be an advantage for them to know in advance what supplies they would get. Application is made on Form PD-25-A. The form itself gives complete detail how to fill it out.

3: On July 1 you should have started putting the Allocation Classification symbols on all your orders. If you don't know exactly how to do this after reading the accompanying article, ask your contracting officer. If such officer is not available, write or wire the Textile Branch, War Production Board, Washington.

4: Orders requiring you to furnish copies of priority certificates to your supplier are all rescinded. Beginning July 1, you can apply or extend any preference rating simply by writing on it: "I certify to the seller and to the War Production Board that I (or company) am (is) entitled to use the ratings indicated on this purchase order." And don't forget to put your classification symbols on the order.

NOTE: Metal for textile mills is really not manufacturing material, and is therefore not strictly appropriate to the PRP system. Textile-mill metal comes under the head of maintenance. You can go ahead and apply for PRP but the chances are that there will be a machinery maintenance order in a few weeks to take care of this particular problem.

II. TEXTILE MACHINERY MANUFACTURERS

1: Don't get any of these three new orders confused with the famous Order L-83. That is a limiting order, whose purpose is to curtail production of civilian goods and convert plant capacity to production of ordnance. The "L" and "M" (material) orders remain in effect under this new program. Order L-83 remains in effect as is.

2: Of course most textile-machinery firms use more than $5,000 worth of metal per quarter, and therefore should have applied for apportionment of metals under PRP before June 30. This is mandatory unless you can convince the War Production Board to the contrary.

3: You also come under the Allocation Certification System, and on July 1 you should have begun putting the proper symbols on all your orders. If you cannot determine which numbers to use, ask your contracting officer, or write to the Textile Machinery Branch, War Production Board, Washington.

4: See paragraph 4 above, under Textile Manufacturers. You do exactly the same as they do about extension of priority certificates.

For those who come under it—meaning all but the under-$5000 class and the exempted class—PRP and its Form PD-25-A supersede and displace all other priority instruments and procedures, effective July 1. For the present, all of the other reporting forms continue in use for both those companies not covered by PRP, and those which must come under the plan.

TO UNDERSTAND how the three new steps hook together, it is necessary to go back now and pick up the Allocation Classification System, the second step named above.

This system is being started during the third quarter and it will become an effective part of PRP during the fourth quarter.

In submitting his PD-25-A application under PRP, the applicant is required to give information as to the end use of his products. But the applicant, especially if he is a sub-contractor, does not know the end use of his product. Even if he did know, he has had no standard way of stating the facts in his PD-25-A. A decimal system code of numbers has been designed to reveal to WPB the end use to which the materials are put. The numbers, from 1 to 23, have been assigned to all the major classes of military, industrial and civilian uses. These numbers are decimally subdivided as necessary. For example, war supplies is number 6; chemical warfare is 6.10; clothing, general supplies, and subsistence is 6.20; 6.30 is mapping and photography, etc. Number 15 is civilian wearing apparel, and this number has not yet been subdivided. Number 1 is aircraft, which is not yet broken down; 2 is ships, which is broken down into several kinds of ships.

Priorities Regulation No. 10 requires that this code be used on all orders placed after July 1 and on all orders previously placed calling for delivery after July 31.

On all purchases for the Army, Navy, and Maritime Commission responsibility for stamping the right code numbers on orders rests upon procurement officials, not upon the manufacturers. But on civilian orders the code numbers are put on by the end user. Consumers and all retailers are exempt.

Actually, the civilian numbers start with manufacturers. For example, a clothing manufacturer is devoting 75% of his capacity to men's suits, and 25% to Army cotton twill uniforms. His orders for wool goods would be coded DP-15. His orders for twill could be coded USA-6.20. But an order for thread, which would be used on both contracts, might have to be coded 75% DP-15—25% USA-6.20.

DP, above, means Domestic Purchasers, and USA means U.S. Army. There are five purchaser groups, into one of which all the 23 major end uses, indicated by code numbers, must fall. They are: Army—USA; Navy—USN; Lend-Llease—LL; other Foreign Purchasers—FP; and Domestic Purchasers—DP.

In brief, if you are contracting to Army, Navy, Maritime Commission, your contracting officer tells you just what numbers to put on your orders. But if you are producing civilian orders, you will have to look at the code, choose the right number, and put it on your orders, together with the appropriate one of the five group symbols. And if the materials you are ordering are to be divided up between more than one of the five purchaser groups, you will have to put the percentage of division, as near as you can figure it, on your order as per example above.

The allocation code system, you see, works backwards, from the end user or manufacturer, to the basis materials producer—the producers for strategic metals, fibers, chemicals, foods and so on. When the War Production Board tabulates these figures near the end of the third quarter, it will know what end-uses are getting what percentage of all materials. That will be the last step in a sound basis for granting materials to applicants under the PRP plan.

THE PRP SYSTEM is in effect replacing the priority system on all requirements for military and civilian production, except capital goods, as of July 1. The priority system was good only so long as there was enough material and supplies to go around. But surpluses have now been used up. It would be foolish to pass out more checks than there is money in the bank. The priorities system did not restrict the *amounts* a manufacturer could get; it merely told him where he stood in the waiting line. PRP tells him how much he can have. But PRP still does not allocate and guarantee delivery. That will come later.

You will notice that PRP distributes materials on an individual company basis: that is, it tells everybody, including subcontractors, what they get. The reasons why PRP does not assign materials to prime contractors alone are mainly two: it would give the prime contractors an opportunity to dominate their fields of operations, and it would conceal distribution from the public, who are always the losers and want to know what goes on.

But, though definite allowances of materials are made under PRP, instead of mere preferences under the old system, actual shipments of specific materials still will be governed by month-to-month directions from WPB through the "M" (materials) order system. "M" orders continue in effect just as before, except they are based on the new Allocation Classification instead of old classifications.

The third step in WPB's move toward complete control of materials and supplies is simplification and standardization of methods of applying and extending preference ratings. This element of the program is transitional.

While some official statements say that PRP supplants and replaces the priorities system, this is not quite true. Actually, PRP puts a *ceiling* on the amount of materials you can get. It does not guarantee delivery of those materials. Therefore, PRP is not a strict allocation system—it simply leads up to one. Therefore, preference ratings are still in the picture, and are being used, during this quarter at least, both by companies required to file applications under PRP, and by those not under PRP. Functions of the ratings, for companies under PRP, are two: to determine the order of importance of deliveries, as before, and to serve as one of several considerations by which WPB will determine *how much* materials will be awarded to the applicant.

But to this extent, rating procedure *is* simplified: effective July 1, any preference rating, no matter how it has been assigned, may be applied or extended by a single form of certification, which states merely that the purchaser certifies to seller and to WPB that he is entitled to use the ratings indicated on his purchase order. Simply write this certification on your order. You do not fill out any forms. Orders requiring you to furnish the supplier with *copies* of ratings are all rescinded, except with reference to certain types of exports. You must also include the proper symbols established under the Allocation Classification system, referred to earlier in this article.

Extension of ratings is, however, restricted to material which will be delivered to, or physically incorporated in, a product delivered to the person to whom the rating was originally assigned, or which will be used to replace, in inventory, materials so delivered.

Special provisions are made for small companies not operating under PRP. These may extend ratings for deliveries of operating supplies including such things as lubricants, small perishable tools, which are required and which will be consumed in filling the rated order. But the cost of such operating supplies must not exceed 10% of the cost of the materials to which the rating is extended. Not more than 25% of the operating supplies obtained in this way during any one month may be metals in the forms described in the Metals List of Priorities Regulation No. 11.

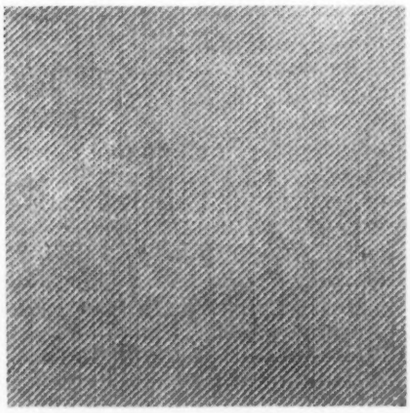
Fabrics For Military Purposes

Twill and silesia uniform linings used by the Army, Navy and Marine Corps

COTTON TWILL UNIFORM LINING, for enlisted men's uniforms, is required in fairly large quantities. One type in demand is an Albert twill to conform to U. S. Army Specification No. 6-100B, with certain modifications noted in recent invitations for bids. Grade shall be firsts; yarn shall be well carded and combed stock, evenly spun; weave shall be 5 harness twill, to the right, 1 up 4 down; fabric shall be dyed an approved shade of olive drab, obtained without the use of sulphur colors, and shall show a good fastness when subjected to tests for crocking, perspiration, dry-cleaning, and water. The fabric shall be mercerized, the face singed, and the cloth given a schreiner finish to produce high luster. Test methods shall conform to Federal Specification CCC-T-191a, as amended, wherever applicable. The twill shall have a minimum weight of 4.4 oz. based on 32 in., and shall have a width of 32 to 42 in., as specified in the requests for bids. Threads per inch shall be 78x126 minimum. Breaking strength, minimum by 1x1x3 grab method, shall be 62 lb. warp and 80 lb. filling. [Although not stated in the specification, the following gray construction is approximately correct to produce the required fabric: 34 in., 74x132, 3.25 yd. per lb. 24s warp, and 36s filling. To finish 32 in.]

Black cotton twill lining, as specified in Navy Department Specification 27L6, is similar in requirements to the U. S. Army Specification No. 6-100B, and and the same approximate gray construction can be used with slight modifications. The twill shall have a minimum weight of 5 oz. per sq. yd. and shall have a width of 36 in. Color shall be black, obtained without the use of sulphur dyes.

Silesia cotton lining cloth, for uniforms of enlisted men of the U. S. Army is needed in fairly large quantities. One type in demand is a twill of carded single or 2-ply yarn, covered in U. S. Army Specification No. 6-18C. The following requirements apply to twill made to meet this specification, but with certain modifications noted in recent invitations for bids: Grade shall be firsts; weave shall be a 2-harness twill 1 up and 2 down, either to the right or to the left; fabric shall be singed, fully mercerized, and free from sizing. The modifications state that the color shall be of an approved shade of olive drab, obtained without the use of sulphur dyes, and shall show a good fastness to crocking, perspiration, dry-cleaning, and water. Breaking strength, by the 1x1x3 grab method, has been modified to a minimum of 54 lb. warp and 40 lb. filling. Test methods shall conform to Federal Specification CCC-T-191 wherever applicable. The twill shall have a minimum width of 36 in., and shall have a maximum weight of 5 oz. per sq. yd. as specified in the requests for bids. Threads per inch shall be 72x74 minimum. [Although not stated in the specification, the following gray construction is approximately correct to produce the required fabric: 39 in. 68x80, 3.50 yd. per lb. 24s warp and 31s filling. To finish 36 in.]



Cotton Lining, Silesia.

Black silesia lining, as specified in Navy Department Specification 55S7a, is similar in requirements to the U. S. Army Specification 6-18C, but a slightly heavier gray construction must be used. Breaking strength, minimum by 1x1x3 grab method, shall be 55 lb. warp and 40 lb. filling. The twill shall have a minimum weight of 4.75 oz. per linear yd. and shall have a width of not less than 35½ in. Threads per inch shall be 72x72 minimum. Color shall be a fast black. [Although not stated in the specification, the following gray construction is approximately correct to produce the required fabric: 39 in., 68x76, 3.00 yd. per lb., 22s warp and 27s filling. To finish 35½ in.

Silesia, cotton twill lining, covered in Marine Corps specifications, dated Jan. 29, 1934, is slightly different in construction and requirements from that called for by the Navy. Grade shall be firsts; weave shall be a 3-harness twill 2 up, 1 down; fabric shall be dyed a fast color as specified in the proposal. The following test shall be made for dye fastness and no greater change shall occur than in similar tests made on the sealed standard sample: Boil for 10 min. in a solution of 80 grains of Marine Corps laundry soap to 1 pint of water; boil for 10 min. in a solution containing 10 grains sodium carbonate to 1 pint of water.

The lining twill shall have a maximum weight of 4.4 oz. per sq. yd. and shall have a width of 36 in., with a plus or minus tolerance of ¼ in. Threads per inch shall be 84x84 minimum. Breaking strength, minimum by the 1x1x3 grab method, shall be 55 lb. warp and 55 lb. filling. [Although not stated in the specification, the following gray construction is approximately correct to produce the required fabric: 39 in. 78x88, 3.10 yd. per lb. 25s warp and 29s filling.]

Drilling, cotton, for uniforms is covered by Marine Corps Specification dated Nov. 22, 1937. This fabric, a 7.7-oz. drill, shall be closely singed, fully mercerized, and bleached and shrunk, and shall contain no sizing. The following requirements apply to the drill made to meet this specification: Grade shall be firsts; yarns shall be combed; weave shall be a 4-harness twill to the left, 3 up, 1 down, with the twill clear and prominent.

The drill shall have a minimum weight of 7.7 oz. per sq. yd., a maximum of 8.4 oz. per sq. yd., and the width shall be either 28½ in., 36 in., or 40 in., as specified in the proposal. Threads per inch shall be 112x54 minimum. Breaking strength, minimum by 1x1x3 grab method, shall be 120 lb. warp, and 85 lb. filling. [Although not stated in the specification the following gray construction is approximately correct: 44 in. 108x56, 1.68 yd. per lb.; 18s warp and 14s filling. To finish 40 in.]

Finishing O.D. Lining Cloth

Pointers on fulling, scouring, and other operations for this wool-cotton blend

Details of manufacturing 12-oz. wool lining cloth covered by Tentative Specification P.Q.D. No. 59 were given in the September, 1941, issue of TEXTILE WORLD. In the following article Mr. Welsh outlines a finishing procedure which will enable one to meet the requirements for this fabric.

By DAVID WELSH

FINISHING 12-oz. O.D. piece-dyed lining fabric made from a blend of 80% wool and 20% cotton has caused plenty of trouble in many mills. However, if the fabric is properly woven and dyed, the finishing procedure outlined below will produce satisfactory results.

According to the specification, the fabric must be thoroughly scoured, well fulled and felted; face evenly but lightly sheared, back unsheared; well pressed and/or decated; firm handle; use of finishing or loading to increase weight or strength prohibited. Shrinkage in sponging, not over 6% warpwise, not to less than 54 in. fillingwise. 50 yd. pieces, put up full width on rolls.

This fabric can be fulled, scoured, and dyed without tacking.

The pieces should be carefully burled —the sewing is not so important. Coarse yarns should be pulled out (and their mates also) then scratched up. Broken picks should be taken out (and their mates also) then scratched up. Floats should be mended.

The goods should be fulled two pieces on a side, each piece to be doubled, and brought up to 5½ to 6 in. in the head, and 56 in. in the width. A fairly heavy bodied soap is recommended for fulling to avoid cracks and wrinkles. The usual temperature should be maintained in the mill. With the pieces doubled, the desired shrinkage should be obtained in about 1 hr.

Being practically all-white fabrics, they can be scoured with the fulling soap. After the goods are loaded in the washer and run around to straighten up, the washer should be stopped and enough cold or lukewarm water added to about half cover the goods in the bottom of the washer. Then the washer is started. If a fairly heavy lather, full of life, results in about 5 min., a half-hour run in the washer will be sufficient to give a thorough scour. Then the fabric is rinsed until it is neutral to a phenolphthalein test, and is then ready for the dyehouse.

If there is any paint or tar in the wool, the usual method of treating with a paint and tar remover is necessary. If an oil has been used in the picker room that is difficult to saponify in fulling, the tar remover will not help matters if applied in the fulling mill. It is safer to use it in the scouring process, as follows: When the goods are ready to start up in the washer, run in the water, work up a lather for a few minutes, open the gates and let most of the dirty soap run out, then add a second soap with the tar remover in it—enough soap to keep the goods running in a fair lather. A 45-min. run will usually suffice to do the job. The usual rinse follows.

If the goods are thoroughly cleansed in the washer, there should be no need of any special cleansing effort in the dyeing. The dyes can be added as soon as the bath is up to its proper height in the dyekettle and all tangles worked out. The proper combination of dyes is most important to obtain a good union. The dyer will need to exert all his skill to avoid streakiness and other defects.

When the goods leave the dyehouse, they should be scutched and vacuum or hydro-extracted as soon as possible to avoid seeping and wrinkles. After they have been extracted and put in a box truck, they can wait for their turn at the dryer for quite a while if necessary. The fabric should be dryed fairly wide to allow for the shearing, pressing, and decating—all of which processes tend to narrow the pieces.

This type of lining fabric usually is sheared three runs on the face on a regular two-cylinder machine. They are not sheared on the back. A single run on one of the newer three-cylinder shears will be plenty.

After remaining on the roll overnight from the decating machine, the pieces are ready for examination. If dyeing has been carried out properly, and the finishing procedure outlined above followed, the fabric should be acceptable —provided, of course, that the strength, width, weight, and shrinkage after sponging are all correct.

Ewing Galloway

A 30-min. run in the washer followed by rinsing should put 12-oz. lining fabrics in good condition for dyeing.

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PRIORITIES AND ALLOCATIONS— AMENDMENTS BY WPB

Burlap—Conservation order M-47 was amended June 12 to enable the Commodity Credit Corp. to purchase frozen stocks of burlap and make them available to growers to relieve a shortage of crop-covering material on the West Coast.

Cotton, Bagging—The Textile, Clothing & Leather Branch of WPB on June 11 clarified a point in connection with Limitation Order L-99. If a cotton mill has manufactured or is manufacturing bagging material of other constructions than those listed in the order, for its own use or for sale to others, it will not be in violation of Limitation Order L-99 if these fabrics are manufactured on looms other than those converted to the production of bag osnaburg or bag sheetings as listed in L-99, for baling purposes. Under Amendment No. 1 of the order (June 5) restrictions are removed from sale of seconds, irregulars and pieces under 40 yd. in length up to 6% of the total production of bag osnaburg and bag sheetings.

Cotton Duck—WPB amended cotton duck order (M-91) to provide a new procedure for handling preference-rated orders for cotton duck. Under Amendment No. 2, issued May 28, a mill is required to refer to procurement officials of the Army, Navy, and the Marines any preference-rated orders received by such mill whenever such orders, if filled, would result in the deferment of previously placed preferential orders rated better than A-2. These officials will then determine whether the orders referred to them duplicate other purchasing arrangements made directly by the Army or the Navy for cotton duck. Other changes by Amendment No. 2 include a revision of the definition of cotton duck to bring within the scope of Order M-91 certain weights and types of cotton duck which must be allocated for the benefit of the war program; revision of certain requirements to permit the purchase of minimum spare parts of articles fabricated of cotton duck for reserves for emergency breakdown; elimination of certain reporting requirements, and several additions and corrections to titles and industry classifications.

Dyestuffs—Dyestuffs conservation order (M-103) was amended to increase the quantity of dyes available for civilian uses. The original order, issued March 28, prohibited the sale and use of ten dyes for civilian purposes and restricted the civilian use of all other anthraquinone vat dyes for the second quarter of 1942 to 12½% of the quantity of these dyes used during 1941. The amendment removes one of the dyes—Golden Orange G—from the prohibited list of military dyes and changes the quota basis from a percentage of only the civilian vat dyes used in 1941 to a percentage of all the vat dyes used in 1941. Under the amendment the manufacturer is permitted to use for civilian purpose 12½% of his *total* use in 1941.

Elastic Fabric—The use of additional elastic fabrics in surgical type corsets is permitted for the benefits of expectant mothers, physically disabled persons, and persons having sagging muscles, by Amendment No. 1 to Limitation Order L-90, issued June 15 by the DIO. The use of elastic fabrics in the manufacture of sanitary belts, sanitary crotch shields, and athletic supports and suspensories was restricted June 18 by WPB in Limitation Order L-137. WPB on June 20 limited the use of elastic fabrics, whether knitted, woven or braided, to essential health articles and to military products. Excepted from this limitation is elastic fabric which is found by WPB to be unsuitable or unnecessary in the production of the permitted articles. The order M-174 became effective June 24.

Jute—General Conservation Order M-70 has been amended June 9, to exempt processors of jute covering, twine and rope from the provisions in the original order requiring certification of bales on deliveries of such products. The amendment corrects an error in the original order.

Officers' Uniforms—The DIO issued June 9 an order (P-131) granting a high priority rating for cloth and other materials needed for the manufacture of officers' uniforms. The rating A-1-i is assigned to materials, such as cloth, buttons and thread to be used by a manufacturer in the production of uniforms, including shirts, overcoats, caps, ties, etc.

Rubber Thread—The WPB prohibited, May 26, the use of bare rubber thread, and of covered rubber thread of size 60 and coarser, in the manufacture of a list of health and medical products. Covered thread, size 61 and finer, however, may continue to be used in such products. Action was taken in Amendment 3 to Order M-124, which restricts knitting, weaving, and other uses of rubber and latex yarn, or elastic thread. Bare rubber thread of any size now may be used only in the manufacture of products for the military.

Women's & Children's Garments—A cloth-conserving order covering women's and children's robes, housecoats, negligees, beachcoats and lounging pajamas was issued May 25 by WPB. They may not be made of cloth containing any wool, except from cloth owned by a manufacturer on the effective date of the order.

Wool and Mixtures—Some restrictions in the Wool Conservation Order M-73 as amended and extended through the second quarter of 1942, were relaxed in an order issued June 2 which consolidates the second quarter order and all amendments thereto. The order makes the following changes: 1. It removes the complete prohibition against the use of wool in floor coverings, draperies and upholstery for non-military use. The order permits the use of the following wools in the manufacture of drapery and upholstery fabrics: coarse carpet wool, mohair, skin alpaca, coarse alpaca fleece, alpaca seconds, Huarizo, llama, or coarse pieces or locks of alpaca or llama. It permits the use of coarse carpet wool in the manufacture of floor coverings. 2. Lower grade alpaca and llama and kid mohair are added to those lower grades of wool which may be used on a more liberal basis than fine wools on the woolen and worsted systems. 3. The order requires that acetate staple fiber also be made available to manufacturers for blending with wool. Formerly only viscose staple fiber had to be set aside for such purposes. Both the acetate and viscose fibers are to be made available for use on any system, as may be deemed advisable by the DIO. In the meantime, it is understood that allocations will be made only to the worsted system. 4. The prohibition against the use of more than 80% wool in non-military blankets is removed in the case of blankets made solely from used paper-makers' wool

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felts and used processing wool felts. The order permits such felts to be cut up into blankets when no longer useful in plants. 5. The provision in the previous order assigning a preference rating to order for fabrics used in officers' uniforms has been removed. Uniforms for Army officers will hereafter be acquired by the QM and thus no rating will be necessary. However, rated orders already placed for fabrics for officers' uniforms are not to be disturbed by the amendment.

Wool Waste—Olive drab wool waste remnants, ends, seconds or rejects more than $1\frac{1}{8}$ yd. long may be sold or used for civilian garments if the Army or Navy, having been offered them, rejects them. This is provided for in Amendment No. 2 to General Preference Order M-87 issued by WPB on June 22, and applies to blankets made from remnant ends, seconds or rejects of any length. The amendment changes the word "wool" to "wool fiber" to make clear the meaning of the order.

PRICE CEILINGS AND AMENDMENTS BY OPA

Bed Linens—Various changes in the provisions of the bed linens price schedule, mostly of a technical character, are affected through an amendment announced May 27, by OPA. Under Amendment No. 6 to Revised Price Schedule No. 89 (Bed Linens), becoming effective May 28, the following takes place: (1) Sales of domestic-type gray wide sheetings become subject to the schedule and are removed from the provisions of MPR* No. 118 (Cotton Products). No labeling requirements apply to gray sheeting. (2) Specific maximum prices are established for domestic-type gray wide sheetings at a level $\frac{3}{4}$¢ per yd. less than 97% of the ceiling for brown sheeting of the same type and dimensions. (3) Trade discounts on sales of domestic-type gray sheetings are fixed at net 10 days to conform to established trade practice in this class of sales. (4) Specific maximum prices are determined for substandard back-filled gray sheetings at 49.5¢ per lb. net of such sheeting, a price which is in line with the poundage price of the standard back-filled type. (5) Sales of bed linens to a manufacturer, converter or finisher become subject to the schedule. (6) Sales of brown sheeting are made subject to the schedule no matter to whom sold. (7) Specific maximum prices for bleached pillow tubing are established, for various types and dimensions at 1¢ per yd. below current levels to bring them into line with ceilings for other bed linens in proportion to relative costs.

Burlap, Scrap—Scrap burlap, scrap bagging and cotton mill waste, materials used variously for bagging, lining and padding, are again placed under the provisions of the GMPR in order to preserve means of distribution, OPA announced June 15. Supplementary Regulation No. 1 which originally exempted these commodities up to the level of the industrial consumer from the general regulation, is now changed by OPA through Amendment No. 6.

Combed Yarns—All combed yarns of the types covered by Revised Price Schedule No. 7 and all finished woven goods of the descriptions governed by MPR No. 127 remain under the provisions of these two price orders, even when sold or fabricated for military purposes, OPA announced June 23.

Cotton Fabrics—Eleven additional cotton fabric groups will come under dollars-and-cents ceilings, OPA announced June 10, as the OPA continued its plan of supplying definite maximum prices in place of individual sellers' weighted averages for the "cotton products" covered by MPR No. 118. Other changes in the regulation are provided through Amendment No. 4. The more important of these are redefinition of "cotton products", extension of the permission to continue selling or delivering "on memorandum" under specified conditions, and revision of the "war procurement" clause to conform with other regulations. Also provided are an extension of the "cotton content adjustment" feature to take into consideration the flax noil content of articles covered, and the correction of inadvertent errors in maximum prices for canton flannels, hose and belting duck, enameling duck and filter twills.

Cotton Products—Any fabric covered by MPR No. 118 (Cotton Products) is exempt from the provisions of MPR No. 127 (Finished Piece Goods) under an amendment to the latter regulation issued June 12, by OPA. The effect of Amendment No. 3 to Regulation 127 is to correlate this regulation with Regulation No. 118 as recently amended and to place under No. 118 sales of all finished carded-cotton piece goods of a character predominantly finished and marketed by integrated or vertical mills whether or not a lot of such goods is actually finished and marketed in a particular instance by an independent converter. Originally, MPR No. 118 applied to fabrics of the specified type produced and marketed by a vertical organization and not to fabrics of the same type when finished or fabricated by an independent converter. The converter's sales of these same types were covered by MPR No. 127. A second effect of the amendment is to bring under MPR No. 127 all sales of finished piece goods of a type predominantly finished and marketed by independents, regardless of who actually finishes and markets a particular lot. Such sales are exempted from MRP No. 118. Since finished goods made from combed cotton yarns are specifically exempted from No. 118, they will now become subject to Regulation No. 127 even though they may be of a type predominantly marketed by vertical organizations.

Finished Piece Goods — Details which must be shown by converters of finished piece goods on their sales contracts or invoices under the terms of MRP No. 127 were explained June 3 by OPA. Reports have been received that converters of finished piece goods interpret paragraphs (a) and (b) under Section 1400.77 to require that the actual division factor used to determine the actual *selling price* be specified on the invoice or contract of sale. This is incorrect. The regulation requires only "a statement of the division factor—used in determining the *maximum price*."

Maximum export premiums that may be charged in the sale of finished textile piece goods for shipment abroad have been established at 6 to $8\frac{1}{2}$% of the domestic maximum price, the percentage varying according to the function performed by the exporter, OPA announced June 6. On June 18 the maximum export premium charged by

* Note: MPR means Maximum Price Regulation; GMPR means General Maximum Price Regulation.

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an exporter other than the converter or manufacturer was clarified through Amendment No. 3 to the Maximum Export Price Regulation. The effect of the amendment will be to equalize the price at which such exporters sell the finished piece goods at approximately 13½% over the domestic maximum price for sale by a converter. The amendment became effective June 20.

Military Articles—OPA on June 4 announced a method of pricing military articles that may be sold or delivered to war procurement agencies after July 1, 1942. MPR No. 157 (Sales and Fabrication of Textiles, Apparel and Related Items for Military Purposes) establishes maximum prices for the following commodities when made in accordance with military specifications: yarns, textiles and textile products; leather, fur, and products thereof; rubber fabrics, apparel and footwear; and wearing apparel, including findings, and other individual, organizational, or ship's personnel equipment.

Osnaburgs—Ceiling prices for wide osnaburgs were lowered by OPA on May 25 by placing them under the provisions of Revised Price Regulation No. 35 (Carded Gray & Colored Yarn Goods) and removing them from MPR No. 118 (Cotton Products). The Amendment No. 4, issued May 25, to Price Schedule No. 35, brings osnaburgs in widths of 42 in. and over into line with maximum prices for osnaburgs less than 42 in. wide. A differential of 10% over the narrow goods, which represents the customary trade practice, is established by the change. The amendment became effective May 30, 1942.

Piece Goods—An extension for one month of the time in which processors of piece goods may submit reports required by MPR No. 128 (Finishing Piece Goods) was announced June 19 by OPA through Amendment No. 1 to this order. Every job processor and vertical organization processing piece goods in the course of trade or business on and after May 4, 1942, shall now submit to OPA on or before July 20, a full report of maximum prices determined under the terms of the regulation for all types of processing services. The amendment took effect June 20, 1942.

Rayon Yarn—Prices which converters of rayon yarn may charge were "rolled back" June 22 by OPA, and, at the same time, there was issued a companion regulation placing formal ceilings over rayon yarns and staple fiber. The two regulations bring to a total of six the number of OPA schedules specifically covering various phases of the rayon industry. All forms of rayon or its products not specifically covered by any of these six regulations are controlled by the GMPR on the basis of March, 1942, levels. MPR No. 167 (Rayon Yarn & Staple Fiber) establishes maximum prices at the levels which rayon yarn producers have observed for their products since October, 1941, at OPA request. MPR No. 168 (Converted Yarn & Converting Charges) applies to commission converters and sellers of converted yarns. Converting covers such operations as twisting, warping, dyeing and spooling, to prepare it for weaving and knitting. The ceilings provided under this regulation are set at substantially lower prices than most converters charged in March, 1942, which were the prices established as the ceilings under the GMPR. The regulation supersedes the general regulation for these converting operations and establishes uniform specific charges.

Shirting Flannel—Ceiling prices which wool mills may charge on sales and deliveries of a specified 10½ oz. shirting flannel to the Army, were announced May 28 by OPA through Amendment No. 3 to Revised Price Schedule No. 58 (Wool, Wool Tops & Yarns). These are the first price maximums established in Price Schedule No. 58 for a worsted fabric by OPA. Ceiling prices of 10½ oz. shirting flannel containing various proportions of foreign and domestic wool applying to sales and deliveries to the Army were provided June 5 by OPA through Amendment No. 4 to Price Schedule No. 58. Previously, Amendment No. 3 established maximum prices for such flannel containing 50% domestic and 50% foreign wool. OPA has been advised that the Army may let contracts for the same type of shirting flannel containing different combinations of foreign and domestic wool. The maximum prices now provided become effective July 1 for sales and deliveries to the Army of 10½ oz. shirting flannel of the specifications set forth in US Army Requisition No. 8-54C.

Textiles, Apparel & Related Items—To prevent delay in the production of certain textiles, apparel and related articles essential for the war program, OPA announced June 19 a method by which war procurement agencies of the Government may enter into contracts and receive deliveries of these commodities pending OPA action on applications for adjustment of ceiling prices. The action is taken through Amendment No. 2 to MPR No. 157 (Sales and Fabrication of Textiles, Apparel and Related Items for Military Purposes). Purchases and sales of certain textiles, apparel and related articles by stores of "war procurement agencies" are exempted from the provisions of OPA regulations under the terms of Amendments No. 1 & 3, announced by OPA on June 17.

Woolen & Worsted Fabrics—Prices of woolen and worsted fabrics that go into men's and women's suits and overcoats are lowered in many instances at the manufacturing and jobbing levels through a special seasonal pricing formula for these goods announced OPA on June 17. MPR No. 163 (Woolen and Worsted Civilian Apparel Fabrics), in providing a method for pricing these fabrics, will facilitate the flow of goods to garment makers. Deliveries by mills and jobbers for the fall season have been pending the establishment of a method of pricing. The regulation took effect June 22.

Wool Floor Coverings—Distributors of wool floor coverings were warned May 27 by OPA that the practice of refusing to accept orders for 9 x 12 rugs and offering instead a slightly different size is an evasion of MPR No. 65 (Resale of Floor Coverings).

Wool, Wool Tops & Yarns—Numerous changes in the wool and wool tops and yarns price schedule to establish additional dollars-and-cents ceilings or pricing formulas, to permit jobbers' premiums, and to make other technical or corrective changes, were provided in an amendment June 5 by OPA. Among the important provisions in Amendment No. 5 to Revised Price Schedule No. 58 are those setting forth a price-determining formula for manufacturers of woolen sales yarns and the granting of a premium of 7½¢ per lb. for jobbers of specified worsted yarns. Types of wool for which specific maximum prices are established in the amendment include scoured shorn domestic wools, South American short wools scoured in the U. S., and certain grades of processed noils.

Adding Variety to Pique Fabrics

Many varied and novel effects can be obtained by simple weave variations

By T. R. HART

Professor of weaving and designing
North Carolina State College

The popularity of picques for suits, dresses, blouses, play suits, bathing suits, and other summer and sports apparel continues unabated. The novel effects described in this article offer suggestions that may be incorporated in forthcoming lines.

REGULAR PIQUES form a series of parallel ribs or welts with ridges and indentations which run fillingwise, or at right angles to the selvage. Bedford cords, frequently called warp piques, form ribs or welts which run parallel to the selvage, or warp. In piques and Bedford cords the ribs or welts are developed in plain weave. These fabrics, in appearance, resemble corduroys in which the corded effect is developed by cut pile.

Pique fabrics are made with two separate and distinct series of warp yarns which are interlaced with two and sometimes three series of filling yarns. One warp contains the face ends which are made of finer counts and contract more than the back ends, which are placed on another beam and woven with more tension than the face ends. Two face ends are used to one back end and they are drawn through the harness and reed one face, one back, one face.

Different series of filling threads are called face, cutting, and wadding picks. Face picks of comparatively fine counts interlace with face warp ends in a plain weave order to form the surface tissue of plain cloth. The same kind of filling yarn is used for the cutting picks which produce the furrows or indentations between the ridges of ribs or welts. Two cutting picks are inserted in the majority of pique fabrics to produce deep and defined indentations. The filling used for wadding picks is usually coarser and softer spun than the filling used for face and cutting picks.

Fig. 1 shows a typical design, drawing-in-draft and reed plan for a regular pique which has 4 face picks, 2 wadding picks, 4 face picks and 2 cutting picks at the top of the design.

Piques, Bedford cords, honeycombs, and other weaves are frequently combined in many ways to produce blouse fabrics, dress goods, skirtings, vestings, and shirtings. One of the simplest ways to embellish pique fabrics is by introducing extra warp threads.

Fig. 2 illustrates a fabric in which extra warp ends have been used to develop a series of square spots in plain weave order. These warp yarns, which are arranged in pairs, are raised to float over a rib and then depressed so as to pass under the cutting picks. The drawing-in-draft of this fabric, Fig. 3, has the solid squares representing face ends of white from the bottom beam. The crosses represent back ends of white from the middle beam, and the dots represent purple extra warp ends from the top beam. Fig. 4 is the chain.

It is necessary to stop the take up motion when the wadding picks are inserted. To do this, the dobby chain is pegged to raise an additional harness lever each time a wadding pick is put in. A cord, or wire, is run from this harness lever to the pawl on the take-up gear and connected so that every time that lever is raised, the pawl will be raised and the take-up gear will not turn on that pick.

The fabric shown was woven with a 32-dent reed. All the warp ends and also the face and cutting picks are 60/2 yarn. The wadding picks are 10/2. There are approximately 116 picks to the inch. By referring to the chain plan,

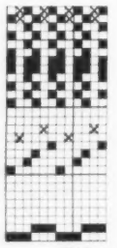


FIG.1

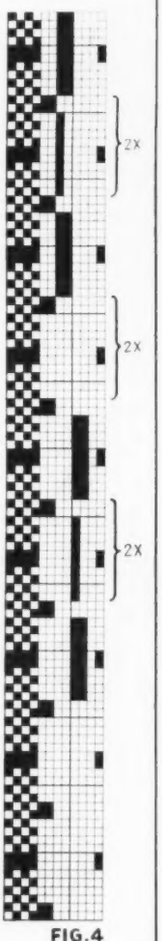


FIG.4

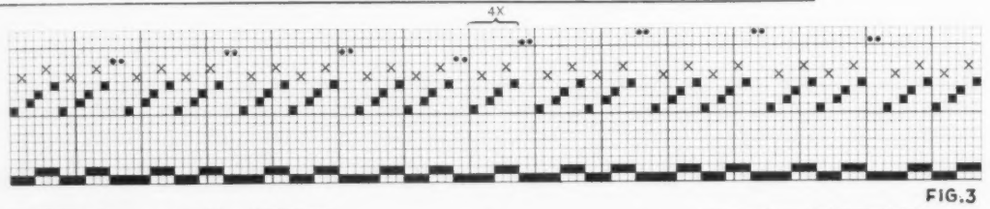


FIG.3

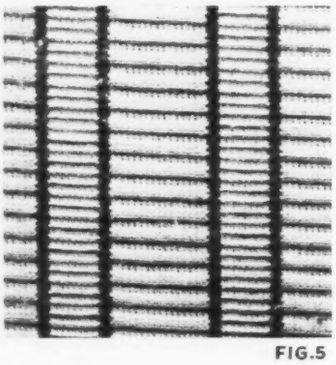


FIG.5

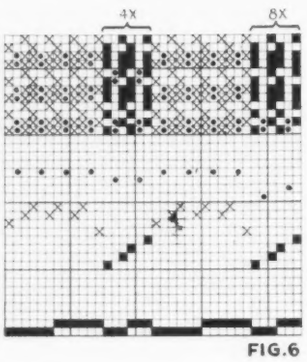


FIG.6

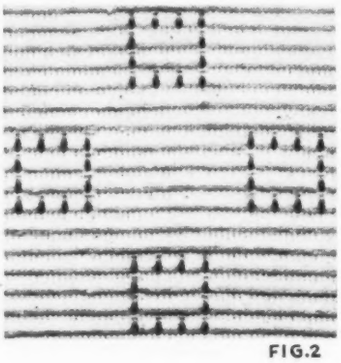


FIG.2

one can see that the pique has two cutting picks, four face picks, two wadding picks and four face picks to each rib or welt.

Fig. 5 illustrates a fabric in which Bedford cord stripes are combined with two sizes of pique welts. The design, drawing-in-draft and reed plan are given in Fig. 6. Solid squares represent face pique ends of white from the bottom beam. The crosses represent brown ends, also from the bottom beam, which form the Bedford cords. The dots represent wadding ends in the Bedford cord stripes and back, or stitching, ends in the pique sections; all of these yarns are from the top beam. Picks 5, 6, 9, and 10, which float on the back of the Bedford cord stripe, are used for wadding picks in the pique stripes. The larger pique welt has two cutting picks, two face picks, two wadding picks, two face picks, two wadding picks, and two face picks. The smaller pique rib has two cutting picks, two face picks and two wadding picks to each rib, and is therefore one-half the size of the larger rib. The wadding picks are 10/1 yarn. All the other warp and filling is 60/2 yarn. The fabric was woven with a 30-dent reed and has approximately 104 picks per in.

Fig. 7 shows a novelty fabric in which warp and filling pique stripes have been used to form checks which are filled in alternately with squares of honeycomb and warp pique or Bedford cords. A reduced design, Fig. 8, shows how this is accomplished. In the drawing-in-draft solid squares represent black ends and crosses represent white ends. The fabric is picked as it is warped. It was woven with a 24-dent reed from 60/2 warp and filling.

By weaving the back or stitching ends in alternate groups instead of in a horizontal line, waved piques can be produced. This is illustrated in Fig. 9, which shows a motive for the stitching ends and also a waved pique design with ten face picks and two wadding picks. Two wadding picks are inserted between each group of back ends. These ends, which are woven tight, force the wadding picks first in one direction and then in the other, thereby forming waved lines across the cloth.

Fig. 10 illustrates a fancy pique fabric made on this principle and then embellished with spots of extra filling in plain weave order. In the drawing-in-draft, Fig. 11, solid squares represent face ends and crosses represent back ends. Fig. 12 is the chain plan for this fabric. The line at the right of the chain plan shows how the take up is stopped when the coarse wadding picks and also the extra filling picks are inserted. When the take-up is stopped for four picks, the four coarse wadding picks are inserted. When the take-up is stopped for two picks the blue, extra filling picks are inserted. This fabric was woven with a 32-dent reed. Wadding picks are of 10/2 yarn. The blue, extra filling, also the regular filling, and both warps are 60/2. The fabric has approximately 104 picks per in.

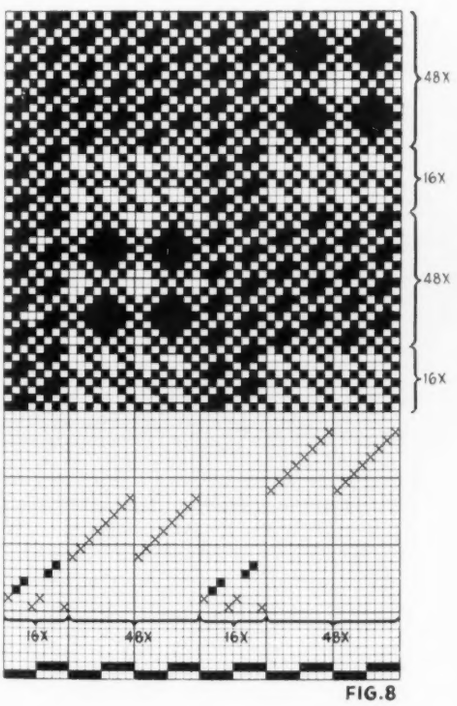


FIG.8

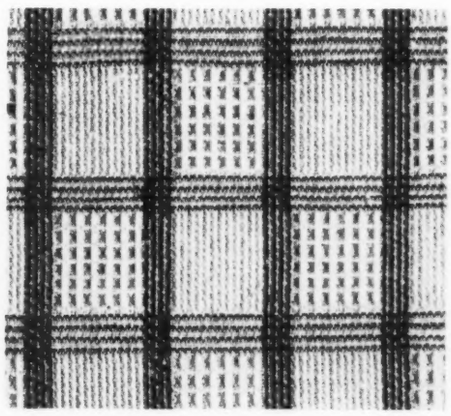


FIG.7

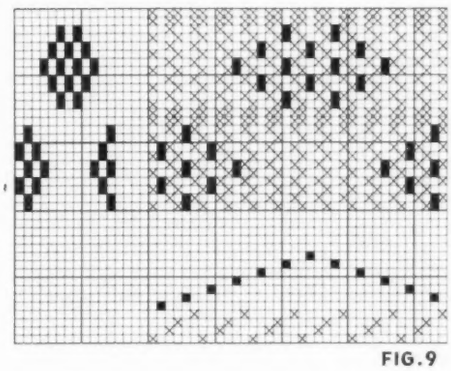


FIG.9

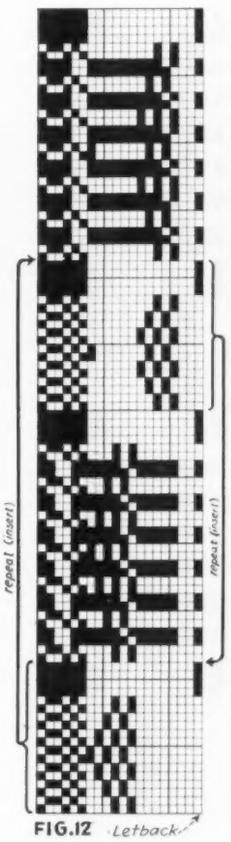


FIG.12

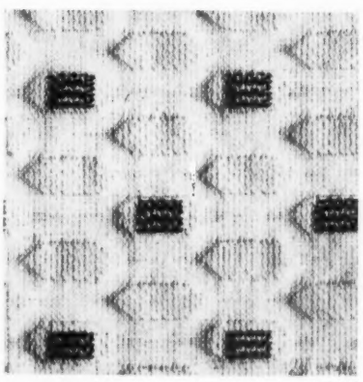


FIG.10

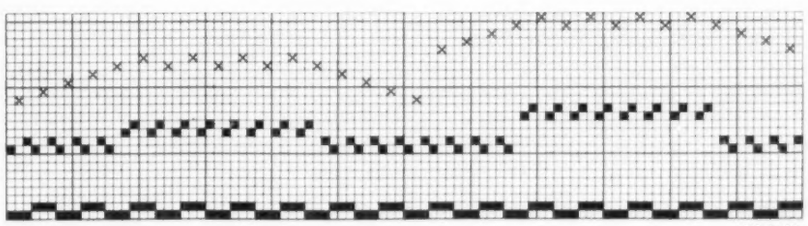


FIG.11

The Weave Room Is Underground

Windowless plant of Macon Textiles designed to provide uniform conditions

UNIQUE AMONG TEXTILE MILLS in design and construction is the new plant of Macon (Ga.) Textiles, Inc., a subsidiary of Uxbridge (Mass.) Worsted Co. The building is a two-story windowless plant, with one complete story under ground level. On the ground level is a cotton spinning room, and on the underground is a complete weave room. H. J. Walters, treasurer and general manager, of Uxbridge Worsted Co., conceived the idea of this unusual construction and has pioneered this development with the assistance of J. E. Sirrine & Co., engineers, Greenville, S. C.

Initially the idea was to build a weave room completely underground so that the walls would not be subjected to the wide range of temperature changes from day to day and season to season. It was thought that the uniform atmospheric and lighting conditions to be realized would be particularly desirable in weaving special fabrics of blended fibers. Provisions were made for humidity and temperature control, with specially designed air conditioning equipment furnished by Carrier Corp. A refrigerating unit was planned, but the system was operated initially without refrigeration, and conditions resulting from the unique mill construction made it unnecessary to use refrigeration. The mill is heated during the winter months by introducing heat into the regular air conditioning equipment; steam is generated by a small gas-fired boiler.

As the excavation was made into the side of a hill, a large part of the room was naturally inclosed underground. Excavated material was banked against other permanent walls to place the rest of the room underground. At one end a specially insulated temporary wall was installed to provide for future enlargement of the building. This wall is not banked with earth. The building is approximately 120x100 ft., a space 20x100 ft. being used to house air conditioning apparatus, air shaft, elevator, toilets, and stairs. Floors are standard maple insulated against moisture condensation. Walls up to a height of 9 ft. inside are of salt-glazed brick manufactured by the Stark Brick Co., Canton, Ohio., and do not need painting. The glaze also helps diffuse the light. The floor above for the spinning room is supported by standard steel beams and posts, as in regular mill construction.

A false or suspended ceiling is 9 ft. above the floor. This false ceiling is an unusual feature, serving a number of purposes. All the fresh air ducts from the air conditioning room, the power cables, the sprinkler pipes, and lighting cables are concealed in the space between the false and standard ceiling. The ceiling is made of expanded metal lath suspended from the first floor beams, giving a 7-ft. space between the upper floor and the suspended ceiling. A 1-in. thickness of cement plaster was spread on the back of the lath, and perforated Celotex acoustical tile was installed on the lower or room ceiling side. Unusual effects are obtained from the use of this tile. Acoustics are such that a conversation in slightly louder than ordinary tones can be carried on with the looms in operation. Besides this, the space between ceilings acts as a return air duct, thus eliminating extra metal ducts. Lint and fly are collected on screens in the ceiling return air openings and that which passes through the screens settles on the top of the ceiling. The top is made smooth so a worker can easily clean the service space regularly with a vacuum cleaner. Both the real and false ceilings are sprinkled, with only the sprinkler heads exposed

Exterior view of new windowless plant of Macon Textiles, Inc., together with a group of worsted-type tropical fabrics woven at Macon Textiles from blend of viscose and acetate rayon and cotton.

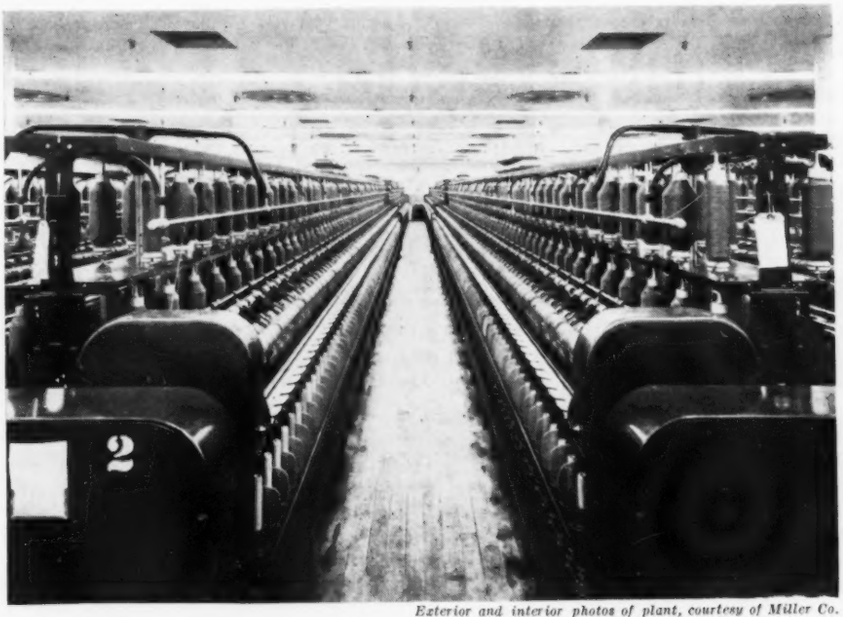
to the weave room. Air outlets of circular design are placed flush with the ceiling to discharge conditioned air into the room.

FOR LIGHTING daylight type fluorescent lamps mounted in continuous troughs recessed in the ceiling were installed by the Miller Co., Meriden, Conn. The troughs are installed across the weave room alleys and are spaced at 5-ft. intervals over the entire room. This lighting is designed to give the maximum illumination at cloth level at the front and back of the loom, thus creating uniform conditions continuously for quality weaving.

Uniform intensity of 50 foot candles is had at the working level of the looms. No shadows are cast and, due to the absence of outside glare, the eye focuses immediately on the work or on distant objects. Since winders, draw-in racks, and grading and inspecting tables are in this room, it is also interesting to note the lighting is equally good for all machines in any position. However, for close grading work on fabric, it was found necessary to furnish additional light at the machine, since 50 foot candles was not sufficient. The drawing-in hand on multi-harness pattern work finds the work exceptionally well lighted at the harness and drop wires, front and back. She can see well in the light, without the use of glasses that she found necessary in a standard mill building.

Spinning room construction is similar to that of the weave room as far as inside room design is concerned, except that the false ceiling is of plywood and is fastened directly to the roof beams. Lights and air ducts are spaced at different intervals from those of the weave room, due to the different requirements of spinning-room humidity and lighting. Since this room is entirely above ground, outside changes in temperature tend to affect the inside air, but automatic controls maintain constant conditions. Uniformly clean, and evenly lighted work is obtained on a 24-hr. operating schedule.

In the weave room 72 X Model, 40-in., Draper looms with cams or dobbies are in operation. Space is available for the installation of additional looms. With the cooperation of Draper Corp. engineers, Macon Textiles has worked out modifications of the looms in order to obtain high production on these special worsted-type, blended fabrics, which are being woven. Also in operation in this room are winders, beamers, drawing-in frames, and shears. All electrical conduits to machines run under the floor.



Exterior and interior photos of plant, courtesy of Miller Co.

Windowless spinning room; note method of lighting and air conditioning.

Interesting results were noted after the weave room was put in operation. Macon Textiles weaves as wide a range of fabrics in the volume suiting fabric trade as is found in any mill. Worsted-type fabrics are difficult to weave and require much weaver care and expertness. In spite of the fact that the weavers had to be trained from the start, remarkable results have been achieved. Out of 3,000 pieces manufactured on all types, 2,000 have been inspected with practically no seconds for weaving defects. This can be attributed largely to the uniform conditions existing.

Uxbridge Worsted Co., since its founding in 1900 has acquired facilities for manufacturing a wide variety of fabrics for the volume market. The company is organized in such a way that it is able to shift rapidly to meet changing style trends and market demands. Macon Textiles is an important factor in the integrated operations of the parent company.

Underground windowless weave room; fluorescent lamps in continuous troughs provide uniform intensity.

Rayon Hosiery Is Here to Stay

State technicians at A.A.T.T. symposium; progress in throwing and knitting cited

IMPROVEMENTS which have already been made and others which can be expected in rayon yarn, in throwing and knitting techniques, and in finishing procedures give assurance that rayon full-fashioned hosiery is here to stay and will not be entirely superseded by Nylon or similar synthetic fibers when they are again available for civilian purposes. These sentiments were expressed variously by several speakers at symposium on rayon hosiery held last month in New York, under the auspices of the American Association of Textile Technologists. Progress made in recent months has resulted in rayon hosiery far superior to that produced before the full-fashioned hosiery industry was forced to change over from silk and Nylon. Unfortunately, in the immediate future there probably will be less rayon available for hosiery, as the Government will require larger quantities to meet war needs. Principal speakers at the symposium were Edmund Lauber, of American Viscose Corp.; Thomas Johnson, of American Bemberg Corp.; Edward Schellenberg, of Atwater Division, Hess, Goldsmith & Co.; and Erb Ditton, of Gotham Hosiery Co.

According to Mr. Lauber, probably not more than 2% of the 500 full-fashioned hosiery mills ever tried to make an all-rayon stocking before the embargo on silk. Therefore, when the industry had to switch practically overnight to a raw material about which it knew little, the problem to be solved was tremendous. But the rayon hosiery made in former years is not comparable in any way to that being manufactured today. The difference is due largely to the fact that previously no effort was made to produce the best possible stocking using rayon.

Among the factors which have led to the improvement which has taken place are the following: (1) It is now widely recognized that the condition of the equipment reflects in the product to a greater extent than when other yarns are used, and it is important to keep the machines clean and in good condition. (2) The importance of producing stockings of the correct length is realized—not only the over-all length, but also the length of the various parts of the fabric, so as to reinforce the parts of greatest wear; accordingly, proportionate lengths are being produced. (3) All concerned are trying to compensate for the low strength of rayon when wet and the fact that rayon stockings stretch when worn. (4) Consumers are being furnished with laundering instructions and are being encouraged to purchase stockings more wisely.

Selection of proper twists was a problem for the hosiery manufacturer and a production problem for the throwster. It has been well established, however, that twisting of the yarn is a very necessary operation in the production of rayon hosiery. This twist serves many purposes and is probably more responsible for the improvement in the quality of the hosiery than anything else. First of all, it produces a sheerer fabric. It gives the fabric more life or resiliency and accounts for the great improvement in fit. Twisting also adds to the snag-resistant properties of the hosiery, although rayon in itself is more resistant to snagging than most other fibers. To knit yarns which had this twist, a size or treatment was needed that would enable the hosiery manufacturer to knit rayon with a minimum of press-offs or waste. Suitable sizes are now available, and the knitting efficiency of rayon compares favorably with that of any other fiber.

When twisting rayon, there is a slight increase in the strength of the yarn followed quickly by a decrease in strength; there is also an increase in extensibility due to twisting; and both of these factors have a bearing on the properties of the finished stocking. The ranges of the twists being used for hosiery are generally such that they are not too high to impair the strength and extensibility properties needed to produce satisfactory hosiery. However, it is important to select the twist best suited for each individual condition so that the desired results are obtained.

CUPRAMMONIUM YARN. Speaking on the manufacture of hosiery from cuprammonium rayon, Mr. Johnson stated that only one type of this type of yarn is offered for hosiery—a medium-luster yarn sold without twist, in skein form, and without oil. It is produced in large spinning lots to assure uniformity and avoid uneven dyeing.

The following yarns are available: 40 den. 30 fil.; 50 den. 36 fil.; 65 den. 45 fil.; 75 den. 60 fil.; and 100 den. 75 fil. The 100-den. cuprammonium yarn is employed chiefly in welts; it is given 10 to 20 t.p.i.; and is used on 45-, 48-, 51-, and 54-gage machines. The 75-den. is employed chiefly as a leg yarn; it is given 20 to 40 t.p.i.; and is used on machines of 45-gage and finer; it is employed to a limited extent as a welt yarn on 54-, 57-, and 61-gage machines. The 65-den. is employed as a leg yarn; it is given 30 to 40 t.p.i. and is used on 51- to 66-gage machines. The 50-den. is employed as a leg yarn; it is given 35 to 40 t.p.i.; and is used on 56- to 66-gage machines. The 40-den. is employed as a leg yarn; it is given 30 to 40 t.p.i., and is used on 57- to 66-gage machines.

Reinforcement of the shadow welt is important. If the stocking is too long, there is danger that the garter will be attached to the shadow welt and cause holes and runs. Therefore, the regular leg yarn should begin at the shadow so as to provide two yarns in the shadow welt. Cotton reinforcement is most needed in the toe, heel, and sole, in that order.

In reference to the strength of twisted yarns, Mr. Johnson stated that there seems to be a pretty general impression that when you insert what would be called a high twist in hosiery yarn—up to 40 turns and slightly more—the strength is appreciably weaker. Perhaps that erroneous impression has come about because of the method of calculating the strength. The usual practice in the rayon industry is to calculate the strength of rayon yarn in terms of grams per denier. As an illustration, assume that 50-den. yarn will break at 100 grams. That yarn is presumed to have a strength of 2 grams per denier. After applying 40 turns of twist to that yarn, we get a break of 98 grams, but the denier is increased by take-up to about 56. Therefore the strength in grams per denier is about 1.75, which shows 12½% loss in strength. Actually, the yarn breaking at 98 grams has only 2% loss; and the actual breaking strength of the yarn itself is all that

textile man is interested in such cases.

It is felt that rayon stockings of round-heel construction generally do not fit the foot as well, but do permit a machine to be set up with less material, an important item with yarn scarce.

THROWING METHODS In discussing the throwing of rayon hosiery yarns, Mr. Schellenberg stated that there are two methods now employed for setting twist. These are: (1) a mechanical method of over-twisting and twisting back, and (2) by application of a sizing material. The first satisfactory sizing material was developed through research by one of the large rayon producing companies.

When cheaper yarns are used, throwing becomes more important. The cost of throwing is an item which must be considered, and a yarn can become too costly for some knitters if given all the throwing treatments sometimes advocated. An inexpensive yarn can be made an expensive one through changes in both throwing and knitting. Solution of the problems calls for cooperation on the part of throwsters and knitters. One variable in the cost of throwing is the form of package—skeins, cones, or cakes. All the better sizing treatments must be applied to rayon in skein form.

A second variable is the oil content of the yarn; this varies from 4 to 10%, and the throwster must adjust his processes so as to have 8 to 10% oil on the thrown yarn; further, one of the best sizes cannot be applied to oiled yarn and it is not feasible for the throwster to remove the oil.

A third variable is the amount of twist; it costs about ½c. to insert 1 t.p.i.; throwing 75-den. oiled cones 25 t.p.i. with a simple oil treatment will cost about 48c. per lb.; throwing the same yarn with 35 t.p.i. and applying a size will cost 90c. per lb.

Many full-fashioned hosiery manufacturers have begun to experiment with acetate rayon and it appears that in the future this type of yarn will be used in larger quantities.

STANDARDS PROPOSED. Two suggestions were offered by Mr. Ditton. First, he proposed that standards be set up for dullness of rayon yarn; what one producer now classes as "dull" may be classed as "semi-dull" by another. Second, he suggested the development of yarn deniers specifically for knitters, pointing out that present deniers were developed primarily for weavers and have not proved altogether satisfactory in hosiery yarns.

The question of twist has received much attention, and there is a tendency now to avoid use of very high twists; on the other hand, if yarn is purchased on cones with low twist, it is necessary to insert some additional twist to insure satisfactory products. It is unwise to save a few cents in throwing cost if this results in the lowering of knitting efficiency.

Today hosiery mills are receiving rayon from as many as eight different producers; each brand of yarn has different knitting and dyeing qualities from the others; for example, with some rayon, it is necessary to knit the stockings 2 to 3 in. longer than with some other brand.

At present experiments are being made in sizing rayon in cake form and in preboarding of hosiery knit from acetate rayon.

HOSIERY RESEARCH AT AMERICAN VISCOSE

A SPECIAL SECTION of the experimental textile plant, the Textile Unit, of American Viscose Corp., at Marcus Hook, Pa., is being currently used for intensive research work on the use of rayon in hosiery. The work was originally devoted solely to development of special yarns for the hosiery industry. When the machinery needed for production of these yarns had to be diverted to the war effort, the research program was changed. One of the first important results of the new program was development of Avconit No. 1, a sizing material for holding twist in rayon yarn during knitting and for increasing the efficiency of the knitting process. Currently studies are being made on the correct twist to be employed for various types of rayon stockings. A series of tests is being conducted to determine the relation between twist and tensile strength, resilience, dullness, and sheerness. Extensive wear tests now being carried out are designed to improve the wearing qualities of rayon stockings by correct styling, with regard to welt, heel, toe, and foot reinforcements. In addition, experimental work is in progress to determine which rayon yarns of the types and deniers now available are best suited for hosiery purposes. Also being investigated is the effect of variations in machine speeds, tensions, and operating technique on uniformity of knitting.

Would Postpone Greenville Show

Southern Textile Association so moves at its stream-lined annual convention

THE SOUTHERN TEXTILE EXPOSITION, scheduled for Greenville, S. C. in April, 1943, would be postponed until "conditions are more nearly normal"—which of course means for the duration—if the will of the members of the Southern Textile Association, as expressed at their annual meeting in Charlotte, N. C., June 13, were to prevail. This expression was voiced in a resolution adopted at the meeting, with grounds that representatives of both mills and machinery firms have to concentrate on the filling of war contracts, and also on the fact that transportation is most difficult, and would be even more so by next Spring.

[Commenting on this resolution, W. G. Sirrine, president of Textile Hall Corp., which operates the exposition, stated in Greenville that postponement of the show had been in consideration for several months but that no further definite announcement will be made until Sept. 1 as he feels that by that time the prospects will be clearer than they are today. He added that the Textile Hall management would be guided by the opinion of a majority of the exhibitors and members of the Southern Textile Association.]

This action was one of the highlights of the streamlined convention. Ordinarily extending from Thursday night to Saturday afternoon, this year's meeting was confined to a dinner on Friday evening and a business session Saturday morning. The effect of the war upon this year's gathering was further demonstrated by the fact that both J. O. Thomas, president, and Robert T. Stutts, vice-president, are now in the service and were not in attendance. This was further demonstrated in the fact that lobby conversation, usually involved with weighty matters of state, was confined to the discussion of such cosmic problems as "How are you traveling?" or "Are you going my way?" or "Have you any extra room in your car?". As twilight fell, several who were stranded for lack of accommodations were polishing their thumbs at the main entrance of the Hotel Charlotte on Tryon St.

T. C. Pegram, elected STA president

W. M. McLaurine, secretary of A.C.M.A., served as toastmaster at the dinner sponsored by the Phi Psi textile fraternity. Marshall Dilling, executive secretary of S.T.A., spoke of the recent accomplishments of the textile industry. John C. Turner promised a "Victory Dinner" when the job of defeating the Axis was completed. Colonel Benn Dan Hill, of the field artillery, was the guest speaker. This affair took the place of the annual dinner given by the associate members division, which held no regular session this year. The officers of this division, John C. Turner, chairman; Falls Thomason, vice-chairman; and Junius Smith, secretary, will be carried over to the next annual meeting.

T. C. Pegram, acting-president of the association, opened the regular meeting by introducing Herman Brown, B. F. Goodrich Co., who demonstrated on a laboratory scale the manufacture of synthetic rubber. G. H. Dunlap, research supervisor, employed nearly a year ago by the S.T.A., The Arkwrights, and The Textile Foundation to supervise, consolidate, and report data from manufacturing tests, gave a report of his activities. He has done a particular job on increased speeds of cards.

T. C. Pegram outlined the things mill men must do to maintain their physical properties and meet production problems. W. M. McLaurine spoke on the subject of "Human Relations."

The following were elected to serve for 1942-1943 term: T. C. Pegram, Erwin Cotton Mills, Cooleemee, N. C., president; Joe C. Cobb, Startex Mills, Tucapau, S. C., vice-president; Marshall Dilling, A. M. Smyre Mfg. Co., Gastonia, N. C., executive secretary.

SNAPPED AT S. T. A. MEETING: (1) M. W. Rogers of Chadwick-Hoskins Co. newly-elected to S. T. A. directorate, and Mrs. Rogers. (2) J. A. Kennedy (left) and Falls Thomason. (3) D. F. Burns (left) and C. T. Burns of Durham, N. C.

Candid Shots at Georgia Meeting

Cotton manufacturers held the annual get-together in Atlanta this season

This meeting of the Cotton Manufacturers Association of Georgia, which was transferred because of wartime limitations, to Atlanta from the usual location at Sea Island, was covered in the June issue of TEXTILE WORLD. The pictures herewith are additional to those used in the initial story.

A SETTEE OF EXECUTIVES: left to right, George P. Swift of Muscogee Mfg. Co., retiring president; Guy I. Parmenter, Goodyear Clearwater Mills, newly-elected vice-president; Julian T. Hightower, Thomaston Cotton Mills, newly-elected president.

IN THE CONVENTION HALL—the assemblage applauding the patriotic utterances of a speaker. In immediate foreground is J. A. Miller, a former president and chairman of the nominating committee.

THE "FAMILY REUNION DINNER" at Atlanta Biltmore Hotel—left to right, Mrs. Julian T. Hightower; George P. Swift, president; Mrs. T. M. Forbes, wife of the association's secretary. Our photographer says object in upper right corner is the moon.

George Swift opens the business session of the meeting with the president's address.

Chas. A. Collier, vice-president of Georgia Power Co., reports on power problems.

Senator Richard B. Russell, of Georgia, brings a message from the nation's capital.

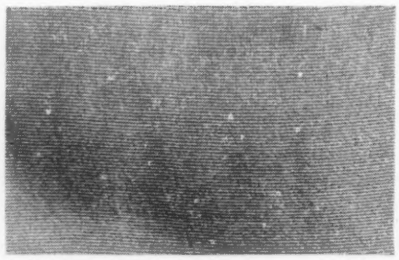
Frank Constangy, of Social Security Board, talks on unemployment compensation.

Defects in Finished Fabrics

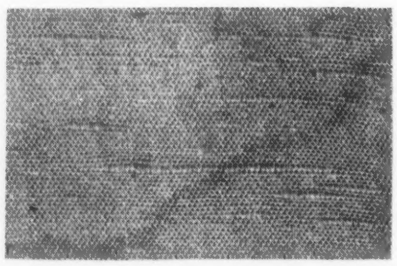
Definitions and causes of faults which occur in dyeing and finishing processes

By BERNARD S. HILLMAN

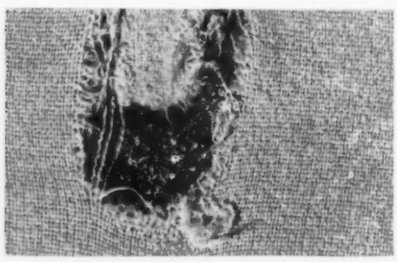
Prevention of defects in fabrics is one of the most effective methods of reducing waste and conserving textiles. Adoption of standard definitions for various defects will aid in averting misunderstandings between manufacturers of gray goods, selling agents, converters, and finishers. Previous articles in TEXTILE WORLD defining and illustrating common defects in woven fabrics have aroused widespread interest. Reprints have been supplied to many mills and to the Quartermaster Corps, where they are being employed by field inspectors. Several of the illustrations have been included in a supplement to the "Glossary of Textile Terms" in the "A.S.T.M. Standards on Textile Materials." On this page are presented a number of illustrations and definitions of defects caused during dyeing and finishing operations. Although the samples illustrated are all-rayon or part-rayon fabrics, most of the defects occur in other types of fabrics.



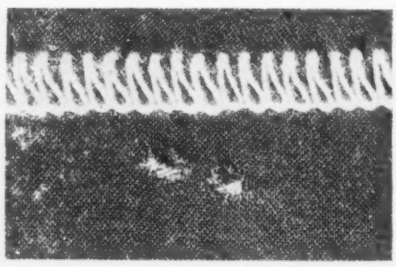
Stain, Selvage to Selvage—Irregular brownish or other discoloration extending more or less continuously across width of fabric. *Causes:* Dirty roll in dye jig or other equipment or wet stick in loop dryer with which cloth remained in contact while stationary; sometimes by partially drying out after flat folding into truck after vacuum extracting.



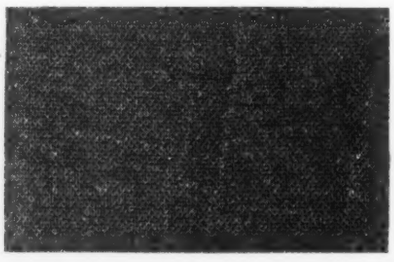
Stain, Gray—Discoloration, usually yellowish or brownish, occurring in gray goods and still evident after dyeing; often difficult to distinguish from stain acquired during dyeing or finishing unless noticed in gray fabric. *Causes:* Stain in gray goods due to fabric getting wet with dirty water, oil, etc., not removed in boil-off or scouring operation previous to dyeing.



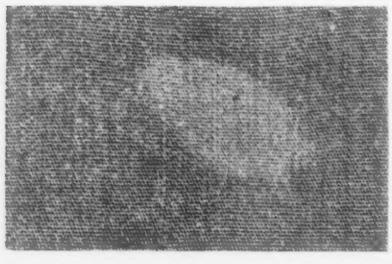
Hole, Tear—Large or small hole with jagged edges which distinguishes it from a cut or burn from chemicals. *Causes:* Fabric caught and torn on screw, nail, splinter, etc., protruding from dye tub, dye reel, or other equipment with which cloth comes in contact.



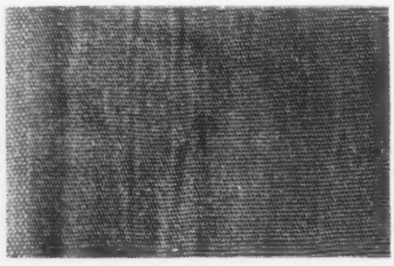
Breaks—Small holes or tears near seam. *Cause:* Lack of care or skill in sewing seam on sewing machine; this defect is likely to occur when rayon fabrics are being stitched in the dyehouse or other departments while they are wet and the rayon yarn is weak.



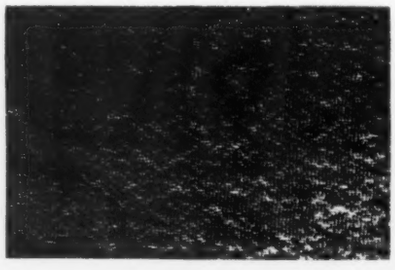
Wrinkles—Small creases warpwise, fillingwise, or both. *Cause:* Fabric while wrinkled run through calender or Palmer machine; uneven shrinkage due to mixed filling will often cause warpwise wrinkles near filling change, this cause being beyond control of the finisher.



Spot, Resist—White or light colored spots. *Causes:* Cloth splashed before dyeing with some chemical or with water, with result that it "resists" the dye; i.e., fails to take up as much color where it is spotted.



Crease Mark—Irregular mark or marks running warpwise of fabric and usually near selvage. *Causes:* Fabric creased while wet on jig or other full-width dyeing machine or on quetsch or other machine during finishing.



Open Fabric—Fabric has uneven thick-and-thin appearance when viewed by transmitted light; defect is most commonly encountered in rayon fabrics. *Causes:* Improper setting of fabric during boil-off or other operation previous to dyeing.

FIXING HOSIERY MACHINES

FULL-FASHIONED MACHINES—Chapter XVII—Fabric Draw-off and Release Mechanism

By WALTER A. SIMOND

WELT BARS must be perfectly straight and the hooks carefully pliered to secure rapid turning of the welts and avoid injury to the needles. The thin welt bars in common use are easily bent when the clamping side is screwed down tightly. Care should be taken to have the ends of all clamping screws flush or a little lower than the surface of the shank holding bar; and the knitters should have a flat surface on which to lay the bars in reassembling them when replacing broken welt hooks. The surface friction between the plates of a bar holds it as they are clamped together; and, if the bar is bent, it may best be straightened by carefully bending it over the edge of a wooden transfer table or workbench—never by striking it over an edge which may twist the bar and have a tendency to loosen the screws.

The welt wires must be smooth to prevent injury to the fabric when they are withdrawn; and straight to avoid an overstrain on the selvage edges of the fabric.

In knitting welts, best results are obtained by connecting both straps to the welt bars, as shown in Fig. F42. Unless the machine has a high knock-over motion which can be used in the welts, it will be noted there is a tendency towards, and sometimes actually, the uneven knitting of "strawberry stitches" in the longer stitches of the welts, although the following fabric is clear. If the machines will knit a satisfactory fabric in the welts, it is a common practice to use a strap at the center of the welt bar, since it is a little faster than to use both.

Considerable narrowing trouble is caused by knitters who do not lift the welt bars quite high enough to allow the welt hooks to turn freely through the tops of the needles when the bars are tipped outwardly in disengaging the hooks. Sometimes the top of a needle will be bent backward far enough to be noticeable, and it must be replaced; and other needles may be bent—only a little, yet enough to open the beards, thus making narrowing difficult and causing stitches to be split or dropped.

Whenever the yarn used will permit, the modern method of turning welts ought to be used in which the welt bars are raised and, without tipping them backward and forward, dipping them slightly to release the welt hooks. This method not only avoids all danger of opening the needle beards, but it is considerably faster.

The welt-bar bridges must be smooth and free from corrosion. However, after long use, they may take on such a high polish as to exclude the air between the top of the bridges and the ends of the welt bars, thus retarding the action of the bars and causing stitches to be dropped from the welt hooks, usually at one end of the bars. To prevent this difficulty, the bridges or the ends of the welt bars will need to be slightly roughened with a file. The welt-bar bridges should be provided with stops to prevent the fine welt hooks from contacting the presser edge of the sinker heads and being upset in the rapid placing of the welt bars. A clearance of 0.01 in. is correct, according to the February, 1934, issue of the *Reading Record*. When the welt-bar bridges are adjusted or replaced, it will be necessary to maintain the correct height of the inner end of the bridges, in order to have the courses of the welts knit clearly without loading of the needles.

THE FABRIC REELS — whether of brass tubing, aluminum or Bakelite—must be kept up to size so the draw-off straps and the fabric will be wound up uniformly throughout the length of the machine. Dents in the tubing or bent draw-off rods cause the pull on the fabric to be reduced, thus throwing additional tension onto the stockings where the reels are of the correct diameter. This not only makes it difficult to adjust the machine for the correct length of the individual stockings, but has a serious ill effect in the narrowings.

The difference in the thickness of new and old draw-off straps may cause an uneven draw-off. When there is a noticeable difference, it is advisable to replace the old straps; and use the old straps on machines where the straps are of webbing which has worn thin. All straps to yield the best results should be made to a standard pattern, thus having the small springs in the same relative position; when the small springs break, they ought to be replaced at once because straps with springs missing never exert the same pull as when all the springs are working. Be sure the fabric reels are adjusted evenly.

Reading machines of the latest design are equipped with an automatic draw-off mechanism, which is adjusted as follows:

First set the upper spring hook plunger 8 in Fig. F43 at zero on the quadrant 9 and then move the springs

Illustrations courtesy of Textile Machine Works

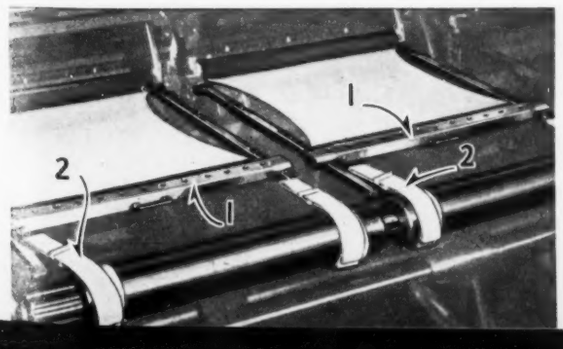


Fig. F42. Welt bar.

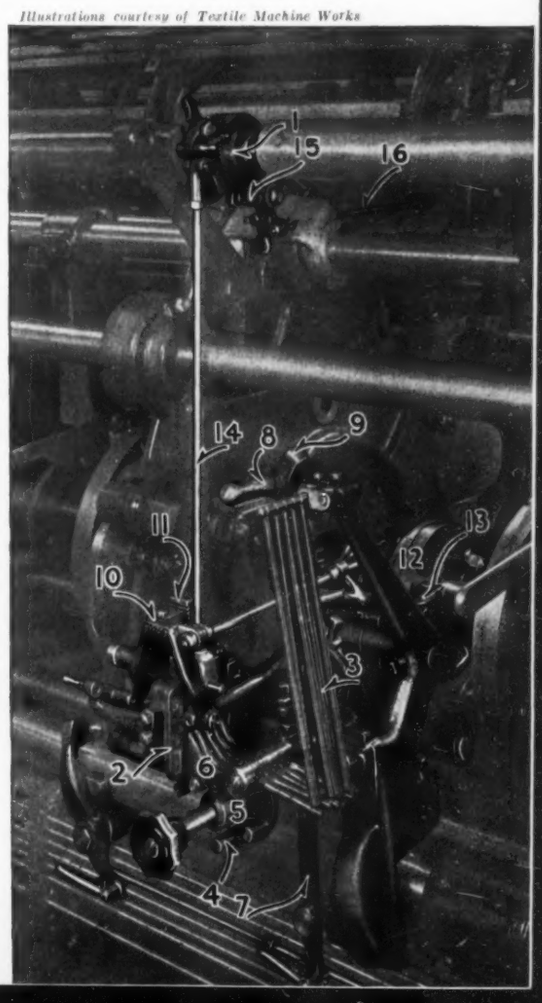


Fig. F43. Automatic draw-off motion.

along the bottom spring studs to obtain the tension required at each section of a particular style. For changes in style, the tension on all of the springs may be changed by moving the plunger 8 up or down on quadrant 9. While knitting, the tension is varied as required by buttons placed on the narrowing chain and means which cause the drum 5 to be turned. If a set is spoiled, the drum 5 must be turned to its starting position when the machine is reset.

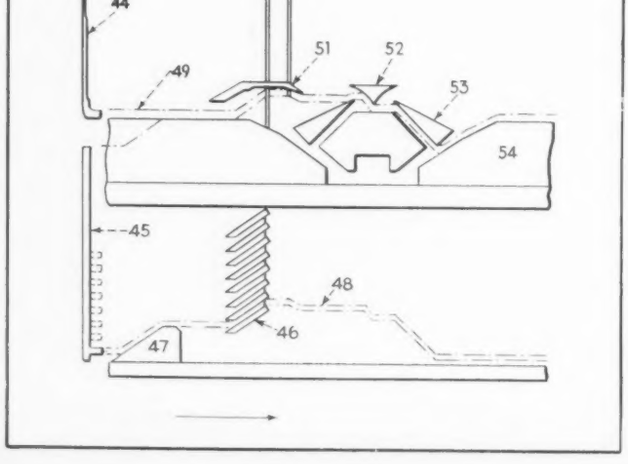
CIRCULAR MACHINE—Chapter XVI (Cont.) Wrap and Reverse Plating Patterning

By JULIAN W. HUGHES

JACK CAM MECHANISM. The jack cam arrangement of older wrap machines was comparatively simple when the needle elevating mechanism of the later model machines is considered. A lay-out of the needle and jack cams and their relation to the wrap head is shown in Fig. C40. One of the main yarn feeding fingers, feeding the yarn at the mouthpiece for regular knitting, is illustrated at 43, and a portion of wrap-head disks with one of wrap fingers is shown in position to feed wrap yarn *W* to the elevated needles. An outline of a needle indicated by 44, and its elevating jack at 45, are shown at the extreme left in their neutral position. It will be observed that jack 45 has eight butts—the seven upper ones being indicated by dotted lines. At 46 a corresponding number of plunger cams are provided to engage these butts, depending on the predetermined pattern. When a needle is to be elevated to receive wrap yarn *W*, the butt on the jack is left to engage its corresponding cam, if it is not to be elevated the butt is clipped off and passes its corresponding cam without being acted upon. As illustrated, all the upper butts on the jack have been severed, so the remaining butt follows the path indicated at 48. It is first acted upon by cam 47 which raises the jack to contact the needle butt, which places it in position to be acted on by plunger cam 46. The jacks and needles travel from left to right—indicated by the arrow under the lay-out—and the path traveled by the jack butt is depicted by double dot-and-dash lines 48. The path traveled by the needle butts is shown by line 49, the path of the needle hooks by line 50, and by comparing the three lines with their harmonizing contours, it is easy to picture in just how the needles are elevated to receive the wrap yarn at the wrap finger. The usual needle cams are represented. When the needles are raised to wrapping position through the medium of the jacks contacting the plunger cams—according to the pattern design—cam 51 arrests the needle butts and prevents the needles from rising too high, and serves to lower them in line to be further lowered by center guard cam 52 to receive the regular knitting yarn at yarn finger 43. The jack is lowered again to neutral position by the needle butt as it passes down under right-hand stitch cam 53; and the needle is again raised to neutral level by the butts passing over right-hand rise cam 54.

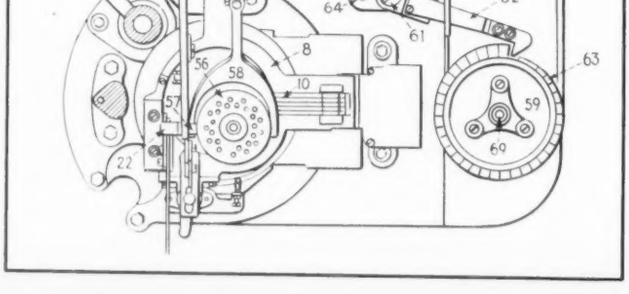
Connection of the wrap head and plunger cams to the pattern drum is shown in Fig. C41. Lever 55 at the left is connected to collar 56 by roller 57 and is for the purpose of raising the head out of wrapping action when knitting the heel or toe, or for transferring a ribbed top at the completion of a sock. This lever is actuated by cams on the main control drum. Forked lever 58 raises or lowers the lower collar to rotate the wrap fingers for shogging. It is connected to drum 59 by lever 60 which is pivoted at 61, and extension piece 62. By observing the arrangement of cams 63 on the drum it can be seen that as the latter is progressively racked around from right to left, the lever is gradually forced outwardly to the left until the drum has made a complete revolution, then the follower snaps back into starting position as shown in the plan. This cam arrangement produces the full 180 degree shog stripe as in the "Argyle" pattern. This drum also carries the cams—above these shogging cams, and not shown in the illustration—for controlling selectively the plunger cams that elevate the needles to receive wrap yarns through the jacks just described.

What has previously been said about keeping cams smooth by polishing also applies to cams used in connection to the wrapping operation. While these cams are not subjected to as much wear as the main knitting cams they should not be overlooked. Needle guard cam 53 (in Fig. C40) should be examined occasionally and burnished to prevent the face from becoming pitted where the needle butts first strike the cam. Should this be neglected the pit or nick may become deep enough to bend or break the butts as they strike the needle guard cam and pass onward to the right-hand rise cam.



C40. Relation of needle and jack cams to wrap head.

C41. Connection of wrap head and plunger cams to pattern drum.



LOOMFIXERS' MANUAL

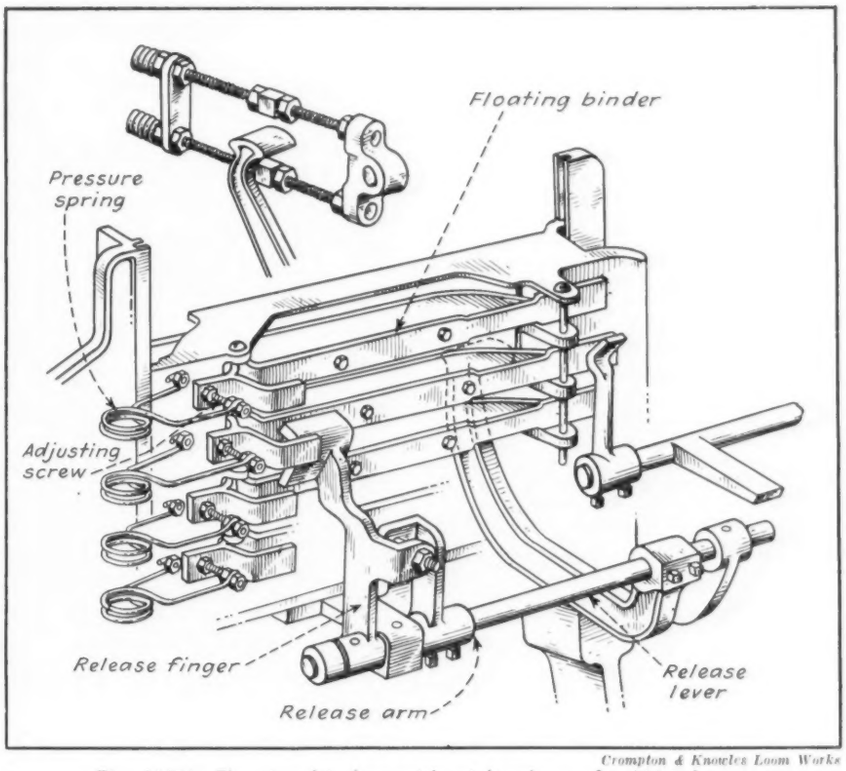
WOOL SECTION—Chapter XIV (Continued)—Box Motions

By EUGENE P. SCHREMP

INSTALLATION of a new shuttle box requires the lifter rod to be threaded a distance of 1/8 in. of being flush with the shelf of the bottom box. The lock nut must be securely tightened so that the rod cannot turn. If the lifter rod is not perfectly straight, it should be straightened or a new rod used, as a bent rod will cause the box to pitch and throw it out of alignment. After the box has been installed, it should be checked by raising and lowering by hand. The outside box guide should then be adjusted so that the box will move freely up and down.

Shuttle boxes should be adjusted so that each box, or cell, will be perfectly level with the race plate on the lay. Improperly adjusted boxes may cause the shuttles to chip, fly out, and other serious troubles too numerous to mention. Adjusting the top box so that it is level is no guarantee that the other boxes will be properly adjusted, therefore, each box must be adjusted individually. To adjust a 4-box section, have crank at bottom center. Put on a short box chain made to lift each box in rotation. With No. 1 box down, adjust the collar at the bottom of the lifter rod. Fig. W24 (June, 1942, issue), so that this box is level with the race plate. Then remove all play from the sprocket chain by adjusting the nuts on the threaded connector. Turn the head motion so that No. 2 box is raised and this box is adjusted by raising or lowering the connector at the end of the sprocket chain in the long box lever. Raising will lift the box, and lowering will cause it to drop. Box No. 3 is adjusted by raising or lowering the tip of the short box lever, and, as it is a compound lever, the adjustment is opposite that of the long box lever that controls No. 2 box. To raise the box, lower the tip; lifting the tip will cause the box to lower. Usually, if boxes Nos. 1, 2 and 3 are adjusted properly, No. 4 box will be level with the race plate also. If trouble is experienced in leveling this box, time can be saved by moving the adjustments of boxes Nos. 2 and 3 so that the total sweep will raise or lower the fourth box to the desired position.

Floating binders with pick release mechanism as illustrated in Fig. W26



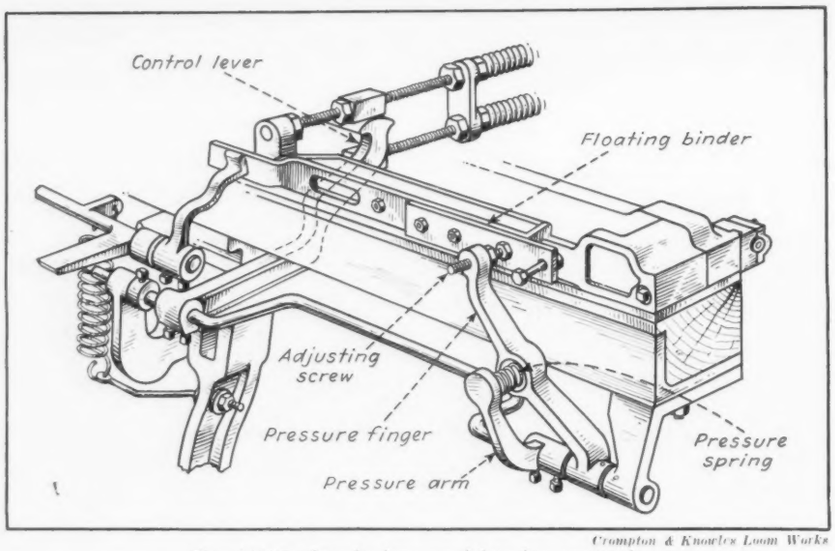
Crompton & Knowles Loom Works

Fig. W26. Floating binders with pick release for W-3 loom.

are used on most W-3-type looms. By means of a slot, the binder is free to move backward and forward and presents a parallel surface regardless of the width of the shuttle. Bending of binders is thus eliminated. The required binder pressure is obtained by an adjusting screw in each wire binder spring. Adjust this screw so that a shuttle with a full bobbin will be stopped with a very slight rebound. Too much binder pressure will prevent the shuttle tip from leaving the hole in the picker and may retard the movement of the box.

The pressure on the shuttle is relieved at the picking point by the upward movement of the crank connector. This adjustment is made when the lay is at top center and the shuttle is in the drop-box side. Loosen the setscrews in the release lever and allow the pad at the end to rest against the nut on the lower rod of the crank connector. The setscrew in the release finger should be turned to half of the threaded end. Bring the release arm forward, eliminating all play between the arm, the finger, and the binder hook. Tighten the setscrews in the release lever. The setscrew in the release finger should be adjusted so that the pressure of the binder is removed from the shuttle. At this point, there should be little or no clearance between the binder and the shuttle. Too much clearance will cause the shuttle to be thrown out of line and cutting of the filling may result. If the hook at the end of the binders are not in line, they can be bent slightly so that the pressure on the shuttles will be released at the same point. Leather facing of the binders must be free of oil and other accumulations at all times as this will prevent proper boxing of the shuttle. Then, there is also danger of the shuttle carrying oil and foreign matter into the fabric. When the leather binder facing becomes worn or ragged, it should be replaced.

Magazine side binder control illustrated in Fig. W27, applies pressure



Crompton & Knowles Loom Works

Fig. W27. Single box end binder control.

to the binder through a spring and lever acting from the crank arm. It also releases the pressure from the shuttle when the loom is picking. On the magazine side, the pad of the control lever works from the top side of the threaded rod on the crank arm. The control lever comes in contact with a pressure finger through a compression spring which applies pressure to the binder and is increased as the lay moves to front center. The later the shuttle boxes, the more binder pressure it will encounter; therefore, it is advisable to box the shuttle as early as possible.

An early boxed shuttle is necessary for proper operation of an automatic loom. A late shuttle will cause revoking and other ills too numerous to mention. It is advisable to have only enough binder pressure to prevent a shuttle with a full bobbin from rebounding, and on the box side it is only necessary to box the shuttle before protection. On the magazine side, the shuttle must box early enough to clear the cutter and revoker; otherwise the loom will not transfer properly.

Adjustments of single box end binder control are made by having the shuttle in the single box end and turning the loom to top center. The adjusting screw, Fig. W27, should be screwed in half way. The pad of the control lever should be placed against the nut on the top rod of the crank connector; at this point, the spring should not be compressed. Turn the loom over so that the lay is in a position for the shuttle to box, which is about half way between back center and front center. The shuttle should be pushed in the box by hand to ascertain if the tension on the spring is correct. The adjusting screw can then be tightened or loosened to get the required binder pressure. Run the loom and set the binder tension so that a shuttle with a full bobbin will not rebound. The capscrew that holds the binder at the heel should be adjusted so that there is ¼ in. of play between the head of the capscrew and the binder plate when the shuttle is fully in the box of the loom.

RAYON AND SILK SECTION—Chapter VII—Filling Stop-Motion

By H. E. WENRICH

FILLING STOP MOTIONS for rayon and silk looms are divided into two distinct types: the side motion for single shuttle looms, and the center filling motion for box looms of two or more shuttles. A few of the later type looms have been converted to box looms and retain the side filling motion, but the stopping of these looms when the filling breaks is not very successful, resulting in poorly woven cloth.

The filling stop motion is for the purpose of stopping the lay and shuttle from continued operation when the filling breaks or after the quill in the shuttle has been exhausted. This action of stopping the lay should take place almost instantly when the lay is within an inch of the fell of the cloth and just previous to the lay reaching front center. As this is an important setting, it should be adjusted correctly to avoid defective cloth caused by cracks, shires, snarly picks, broken picks, center loops, and tight and loose marks resulting from pick-outs.

The side filling stop motion is simple to operate and to adjust. A cam secured to the bottom driveshaft operates and also times the stop motion cam lever and adjustment rod. The adjustment rod controls the motion of the filling fork slide in relation to the knock-off lever. The filling fork rests in the front position of the slide plate secured to the breast beam, the fork prongs passing through the stop motion grid secured to the lay in an upright position beside the front inside box guide. When a filling yarn is broken, the lay beats forward, causing the fork to engage with the fork slide, and indirectly stopping the loom. When the filling yarn is intact, however, the yarn passes between the filling fork prongs and the grid plate, tipping the prongs downward and lifting the opposite end of the fork to prevent the engaging of the fork with the slide as the lay beats forward.

Side filling forks, as well as interchangeable prongs, are available in various weights to be used according to the type of filling yarns; the finer the yarn, the lighter should be the fork and prongs. For fine yarns, the fork must be light; otherwise the prongs would push the yarn through the grid and cause the loom to stop with the filling intact. However, the correct fork weight can be misjudged. If the fork is too light, broken picks may be woven into the material in the following manner: When the filling yarn breaks at the end opposite the filling motion and the shuttle is being thrown toward the end with the filling motion, a long tail of filling yarn may be left dragged through the closing shed. If the fork is too light to push the tail through the grid, the loom will continue in operation, causing broken picks to be inserted in the fabric.

When weaving spun silk or filament rayon yarns, new grids should replace the old grids whenever they become cut; otherwise the cloth will have a fuzzy appearance on the filling stop motion side several inches in from the edge of the selvage. These chaffed rayon filaments occasionally do not show up until after the cloth has been finished. Every piece coming off that loom will show this defect until the grid is replaced, lowering the value of the fabric.

TEXTILE PLANT PROTECTION SECTION

TEXTILE PLANT PROTECTION is a more urgent problem than most manufacturers may realize. The reason for this is that, at first thought, it is construed in its narrowest sense: protection against incendiary bombs. Obviously, the mathematical chances of any specific textile plant having to fight this particular danger are relatively slim. But let not that thought lull you into inaction!

In its broadest sense, textile plant protection today means keeping the textile production-line going without interruption. And that in turn involves mathematical chances which have been increased immeasurably by the pressure for production. Potential dangers from fire, from machine-breakdowns, from accidents, from human fatigue, from strained morale—all without benefit of enemy action—have been multiplied to an alarming degree.

In planning this special Plant Protection Issue, the editors of TEXTILE WORLD divided the subject into four main phases: (1) Protection against physical damage from fire, bombs, etc.; (2) Protection against sabotage; (3) Protection against lost time from accidents; (4) Protection against let-downs from impaired morale. To cope with this quadruple threat, textile manufacturers need, first and foremost, organization of personnel, and, second, proper equipment.

The personnel problem involved is a complicated one. On the plus side, there is the inherent craving of every individual to do his or her bit in this emergency. On the minus side are, first, the increased risks resulting from pushing men and machines referred to above, and, second, the danger of insufficient organization from the top side. That is where the textile executive's job begins.

The organization doesn't have to be a cumbersome one. In fact, the more stream-lined the better. But it *must* engage the whole-hearted understanding and support of every man and woman in the mill family.

So far as equipment is concerned, the emergency creates new opportunities for supplying-firms whose normal products have been erased by priorities. Our Textile Equipment News department in this issue, and the advertisements in this same issue, reveal the ramifications of plant protection and the possibilities for stability of employment and profit among companies whose regular business has been interrupted. We shall present further news items and advertisements in subsequent issues.

Thus to both textile manufacturers and to makers of equipment, machines and accessories used by textile mills, plant protection offers a dual field for action: (1) keeping the textile production-line flowing for all-out prosecution of the war; and (2) creating new prospects for business.

That, in any man's language, is enough to make the subject of this special section of TEXTILE WORLD a "natural."

Douglas G. Woolf

How to Guard Against Fire, Accidents, Let-Downs, Sabotage

★ ★ ★ ★ ★

Protection Against Plant Damage

The alert sounded on whistle, siren or bells starts the mill's protective system in immediate operation. Above shows test of whistle in Pepperell Mfg. Co's plant in Fall River.

Mobile squad arrives at point where bombs have fallen and prepares to go to work.

By WILLIAM B. DALL,
Managing Editor, Textile World

★ ★ ★ ★ ★

PLANT PROTECTION in wartime means guarding more carefully not only against the usual peacetime hazards, but against the augmented or new hazards brought on by ruthless warfare. Air-raid and fifth-column sabotage are the principal war-born dangers. Sabotage is considered on page 96. The air-raid and its ramifications, together with other threats to physical property, will be considered on this and immediately following pages.

Air-raid threat by bomb involves three major types of missile (1) incendiary bombs, (2) demolition bombs, (3) gas. The threats are met (1) by organization and equipment to limit bomb damage, and (2) by blackout and camouflage to deceive hostile bombardiers into missing the mark.

1. *Incendiary bombs* (regarded as the most likely kind to be launched in quantity in air-raid attacks on this country) must be fought by specially trained mobile units as soon as they fall. If fires result, these must be fought as ordinary fires would be fought with reference as usual to what sort of material is burning; a possible difference is that there may be more fires burning simultaneously than would ever be likely in normal times, and consequently lessened help or possibly no help at all is to be expected from the local municipal fire department.

2. *Demolition bombs* of usual size destroy the average small building on direct hit. Steel-frame buildings or reinforced concrete buildings of sufficient size and number of stories are regarded as fairly safe four or more stories below the roof if occupants are removed from proximity to outside walls or windows. Buildings near the exploding point of a demolition bomb are likely to collapse if of frame or brick walls; otherwise the principal damage in a radius of several hundred feet is shattering of glass windows. Protection of personnel in anticipation of demolition bombs involves arrangement of a suitable, relatively safe, already existing area, designated as a shelter. It is rare here, but common in England, that special bomb-proof shelters are built. It is usually uneconomic to protect a vulnerable building from a direct hit, but the hazard of shattering windows may be minimized by

A Fire Service Organization

Fire chief in charge of fire brigade and in full charge at a fire. Should have training, preferably in a city fire department. Might be head of mill's maintenance department or master mechanic, if not a full-time man. He should reside near plant.

Automatic fire fighting equipment, sprinklers, etc.

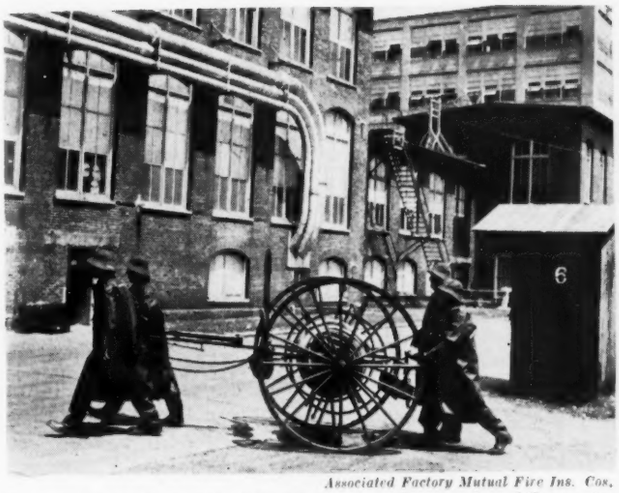
Fire Alarm Service automatic and manual.

Fire Brigade made up of qualified employees; frequent drills and other specialized training. Men should be stationed at strategic points on sounding of alarm—especially at valves to prevent unauthorized turning off of sprinklers.

Fire Stations may be large or small, but localized equipment (buckets, water, sand, extinguishers, standpipe and hose, etc.) is needed near fire at its inception.

Mobile Equipment Carts, trucks, etc., containing specially designed equipment to fight incendiary bombs, as well as the usual extinguishers, pumps, respiratory protectors, tarpaulins, protective clothing, axes, crowbars, etc. Mobile reels and chemical engines are serviceable where size of plant warrants.

Standby Equipment—The plant's fire pumps should be under constant check and should be started at once on the sounding of an alarm; standpipe equipment and outside hydrants should be more frequently inspected, as well as sprinklers, valves, hose lines, ladders, fire doors, fire shutters, exits and fire-escapes, etc.



Associated Factory Mutual Fire Ins. Cos.

The fire brigade is outfitted with various forms of mobile equipment such as hose reels for getting water to bear upon fires which get beyond the control of the special air-raid units.

Walter Kidde & Co.

Special devices are necessary to fight oil fires or those arising from oil-filled incendiary bombs. A blanket of carbon dioxide chokes off the fire's oxygen supply.

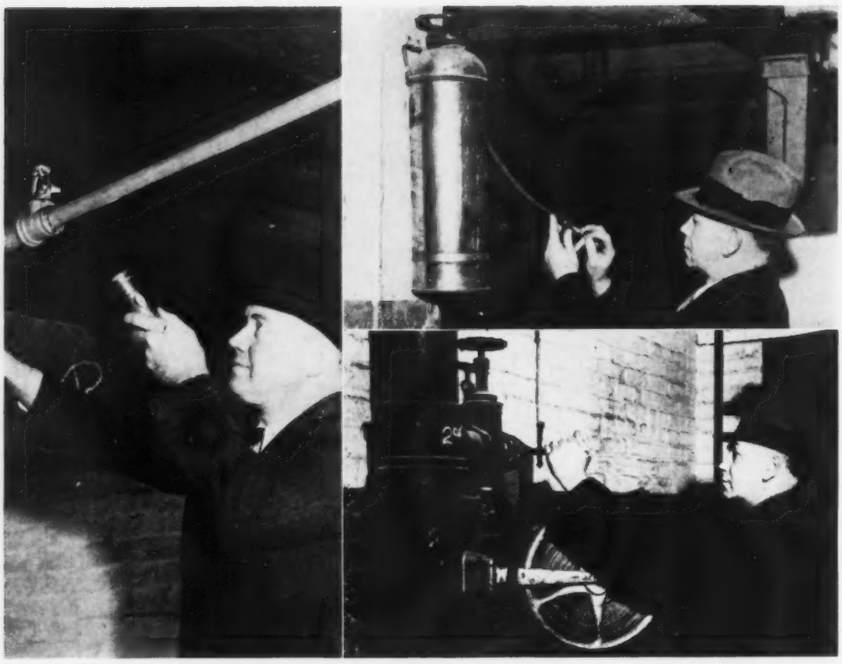
treatment of them to prevent flying splinters, and some vital spots, such as power plant, water supply controls, etc., may be guarded by sandbag walls. Particular items of power equipment may be protected from bomb splinters by special removable coverings.

3. *Gas bomb* protection is largely a matter of taking care of personnel, and involves prompt recognition of the type of gas confronted, and the use of safety clothing, moving to higher floors, avoiding cellars, and other suitable precautions.

TO MEET THE THREAT OF FIRE and other damage from the air, a properly-equipped and trained air-raid warden system is recommended. The organization heads up to a chief warden and is subdivided downward by any suitable number of ranks, depending on the number of employees, to the post warden and his assistants. The outfit begins functioning through the use of an alarm system, involving sirens, whistles or bells, which is tied in with the local air-raid warning, and should function simultaneously with it or shortly thereafter. As the alarm sounds the employees are evacuated to the prearranged safety areas, and the various service units for incendiaries, fire, protection of vital spots, first aid, etc., are manned and ready. Watchers are placed at commanding points to send a call for such service as is needed, using a prearranged intercommunication system. The safety areas are usually selected deep in the plant away from outside walls and windows. If in a basement it must be ascertained that the flooring above will sustain the weight of all higher floors should they collapse, and a number of exits should be provided.

The incendiary bomb is now to be fought with a solid stream of water according to several good authorities. The stream causes bomb to burst, scattering particles of burning magnesium away from the direction of the stream. The small fires created can be doused one by one and the time of fighting the individual bomb is much reduced from the previously recommended spray treatment.

The mobile fire units should be equipped and trained to handle particularly (1) magnesium, (2) thermite and (3) oil-type bombs, with some attention paid to the rarer (4) phosphorus and (5) sodium types. For magnesium, a direct stream of water is now recommended which so stimulates the burning of the bomb that it bursts into small fragments (usually flying *away* from the direction of the stream) but can



Associated Factory Mutual

(A) Automatic sprinklers are the backbone of the mill's regular fire fighting apparatus. (B) Soda-acid extinguishers should be scattered at strategic points and should be under constant inspection. (C) Standpipes with lengths of linen hose are another basic appliance for control of fires.

be brought quickly under control, each of the small burning fragments being also doused with water. Some incendiaries are built with high explosive in the shell chamber which lets go after two minutes of burning. This water-stream attack, made at once on a bomb, will perhaps obviate the explosion by extinguishing the bomb. For thermite there is no extinguisher, but sand may be used to localize the effect and keep the bomb under relative control till it burns out. The oil-type, which sprays burning oil in all directions, must be fought like an oil fire with the usual kinds of blanketing chemicals. The phosphorus bomb must be kept wet; when it dries, it ignites. Never wet the sodium bomb, it should be smothered with sufficient dry sand or dirt.

To support the mobile unit there must be a good, standby fire-fighting system, involving sprinklers, standpipes and hose, fire doors, hose carts, additional pumping equipment, etc., which will handle the situation if the fire spreads beyond the bomb or its immediate locality.

To make this equipment effective there must be regular drills for the men who will operate it, and regular inspection to check the condition of the apparatus itself. The squads should be considerably augmented beyond peacetime requirements and drills held at more frequent intervals. The check-up on the apparatus is not only for usual maintenance, but to guard against any malicious tampering. This basic fire-fighting equipment may be the mill's only safeguard in an emergency which finds the local fire department already over-burdened. A well-organized mill fire-fighting force is an aid to its community, since the local municipal department is thereby relieved for concentration on otherwise unprotected areas if the emergency warrants.

In advance of threatened destruction, the mill should plan for the safeguarding of its records by fireproof vaults, microfilming, or otherwise.

It is also important to protect essential services, and on an alert a crew should go on duty at once in the power plant, the water control

A relatively safe area should be designated as an air-raid shelter for the refuge of employees when such raids are imminent. Above are Pepperell employees at the Biddeford plant in such a shelter during a drill.

Common Causes of Mill Fires

1. Matches, cigarette butts, smoking.
2. Poor housekeeping, collections of rubbish, rags, lint.
3. Foreign material in a picker.
4. Sparks from grinding wheels, or other sources.
5. Electrical extensions, frayed cords, unguarded lamps.
6. Bridged fuses, overfusing.
7. Sparks from chimneys, from refuse burning.
8. Torches, lamps, lanterns near combustibles or flammable vapors.
9. Spontaneous combustion.
10. Dust in ducts of a blower system.
11. Electrical breakdowns.
12. Overheated bearings.

point, and the communication center, to function as need be. Watchers should be set at prearranged points.

TO RENDER BOMB-HITS LESS LIKELY, the blackout has been prepared in many sections. Windows must be masked if work within the mill is to continue. Where movable curtains of impervious material are not practicable, windows may be painted with opaque paint. Painting on outside is preferred, for it also cuts the light-reflection property of large glazed areas. Special shields and ventilators have been devised to give adequate air supply to those working inside without transmitting any light to the outside. Luminous signs are also useful to guide those who must move about in the darkness, which is necessary when the only way a plant can conform with blackout regulations is to turn out its lights. Official blackout regulations by War Department and OCD are soon to be issued.

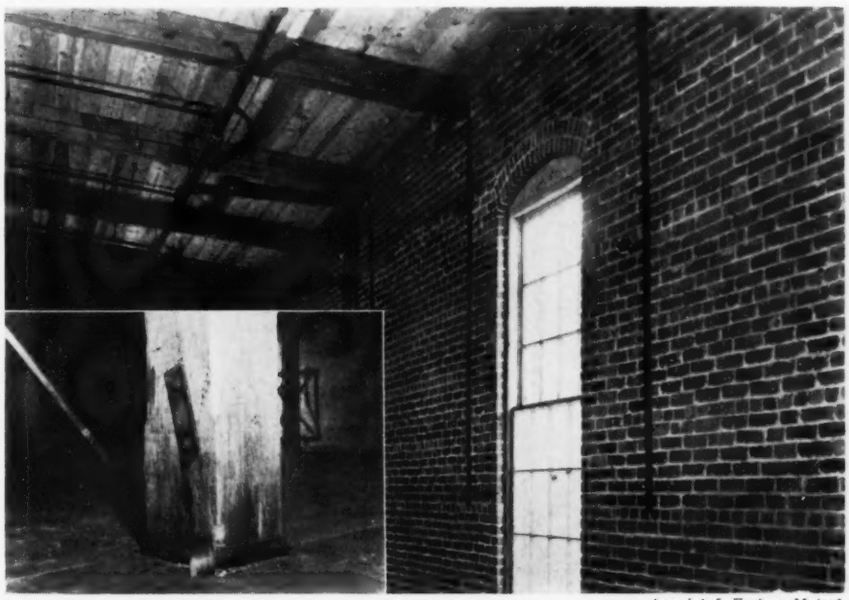
Camouflage is a somewhat complicated science and the cost of good camouflage renders it unlikely to be used except on points of the greatest importance which are under definite threat from the air. A form of camouflage which any plant may adopt is the use of a low-visibility paint on tanks instead of aluminum paint, and some of the newly devised paints have excellent heat-deflecting properties.

Arson is an obvious means for enemy attack upon our production facilities. Policing the plant is one protection; another is an automatic fire-alarm system. Constant check on condition of fire apparatus is important, for the saboteur often damages the protecting apparatus before starting the fire. When an arson-set fire gets under way it must of course be fought as any other fire of similar character.

Where blackouts are not the rule, plant protection is aided at night by flood-lighting to show up prowlers, or by glare-lighting in which light comes from sources several feet away from the plant and is focused by fresnel lenses in such a way as to shine blindingly in the face of any one approaching the plant while the plant watchmen are secure in the relative darkness near the plant walls.

To guard a valuable production property for continuous service in producing military goods, the hazards arising from wind and flood should be considered. If there are nearby rivers which might over-run their banks, a survey should be made to check on the feasibility of drainage canals, overflow basins, etc., to dispose of flood waters, or levees might be built around the plant property or vital parts of it. Wind usually does little damage to an industrial building unless it can tear away the roof. Best protection against wind, therefore, is the obvious one of making sure that the roof is anchored and held in place by the best designed means available for the particular type of construction involved.

To the end that supplies of needed military and civilian goods may flow out increasingly and undiminished, the protection of mill property in the current emergency warrants greater expense of time, thought and money than at any previous period. Management's responsibility to maintain the mill as a going unit has been broadened beyond its stockholders, bondholders and employees to the nation and its allies at large.



Associated Factory Mutual

Against wind damage there is the simple expedient of anchoring the roof to the side walls and the roof supports to the flooring. Two methods are shown.

Methods of Shatterproofing Glass

It is virtually impossible to prevent the fracture of glass under stress of the nearby explosion of a demolition bomb, but the injuries caused by flying splinters (60% of all casualties in England's experience) can be lessened by the following precautions:

1. Criss-crossing with strips of adhesive tape, which must also be attached to the window frame and be on both sides of the glass.

2. Replacement with laminated glass, wire glass or tempered glass.

3. Inside guard of transparent cellulose acetate reinforced with wire screen.

4. Cementing to the glass a fabric or netting attached also to the frame. Suitable adhesives are cellulose nitrate lacquer, glycerine glues, and ordinary flour paste. Do not use sodium silicate or water glass or animal glue as these may permanently etch the glass. Cover both sides.

5. Covering both sides with a cellulose film at least 2/1000ths of an inch thick.

6. Boarding up both sides of window, or blocking window area with masonry wall or with glass block.

7. Wire netting of ½ inch mesh.

8. Two or three layers of burlap, loosely hung; curtains give only moderate degree of protection. Hanging blanket or quilt a foot or so back from window, free to swing. Similar devices also give black-out service.

9. External treatment with burlap and bitumen gives weather protection after the glass is fractured.

10. Ordinary bracing device to prevent vibration of glass is *not* effective in preventing shattering.

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Protection Against Accidents

By WINN W. CHASE, *Technical Editor*, and HAROLD E. REED, *Assistant Editor, Textile World*

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Wrong: Don't lift with back muscles. *Right: Lift with legs to avoid strain.*

1. Improper handling of materials may be due to lack of suitable hoists, conveyors, or other materials-handling equipment; to improper methods of lifting bales, bags, warps, beams, cloth rolls, and other heavy objects (as shown above); or to improper loading and piling of such objects. To prevent accidents from this cause, make a survey of materials-handling operations in each department; install adequate materials-handling equipment; instruct employees in proper methods of lifting and carrying heavy objects; provide safe storage facilities; inspect materials-handling equipment at regular intervals.

2. Failure to wear protective attire may be due to lack of such attire or to employees neglecting to put on such attire before engaging in hazardous occupations. To prevent such accidents, make a complete plant survey to determine which operations require wearing of protective attire and which employees are engaged in those operations; provide goggles for employees who handle chemicals which may cause injury to the eyes, use compressed air for cleaning equipment or ceilings, perform grinding or similar operations, handle bale ties, etc.; provide safety shoes for employees who handle heavy objects or who work in bleach houses or other departments where floors are wet or slippery; provide heavy, chemical-resistant gloves for employees handling heavy objects or dangerous chemicals.

Wrong: Don't take chances with flying particles. *Right: Wear goggles or shield.*

TO SPEED WAR PRODUCTION, accidents must be prevented. Last year, 18,000 workers were killed through industrial accidents; 180,000,000 man-days of labor were lost—sufficient to build 45 battleships, or 375 destroyers, or 450 submarines, or 195,000 light tanks, or 110,000 trainer planes, or 75,000 fighter planes, or 30,000 medium bombers, or 15,000 heavy bombers. To curb the mounting accident rate, the President of the United States has issued a proclamation, calling upon every citizen in his public and private capacity to do his part in preventing wastage of human and material resources of the nation through accidents.

The textile industry—although it has reduced the frequency rate of accidents by 62% since 1926—is in seventh place among the 30 major industries, with a frequency rate of 7.7 reportable injuries per million hours worked. Thus far the textile industry has had an enviable record for producing on time and in the quantities needed those products required by our armed forces. But if it is to maintain that record in the face of increasing demands and the necessity for employing thousands of new workers not skilled in textile operations, it must pay more attention than ever before to prevention of accidents to its employees.

Protection of workers in textile mills against accidents calls first for a clear understanding of the major causes for accidents and the methods for preventing them and, second, for the establishment or expansion of safety programs, together with the segregation of accident-prone employees from occupations which are hazardous.

Causes of accidents in textile mills have been analyzed recently in two studies—one by the National Safety Council, and the other by L. L. Eaton,

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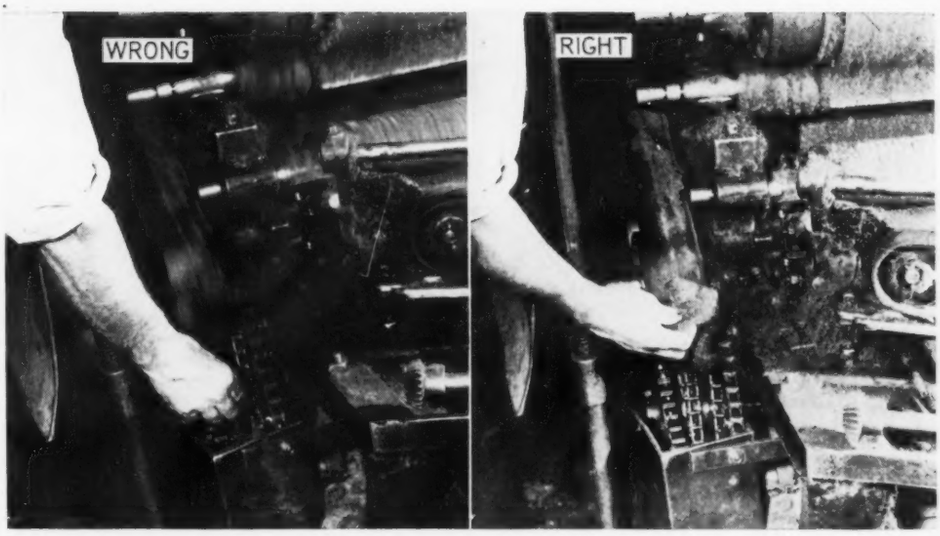
of Liberty Mutual Insurance Co. Most frequent causes, as shown by those studies are: (1) improper handling of warps, beams, cloth rolls, boxes, trucks, and other materials; (2) failure to wear protective attire, such as goggles, eye shades, safety shoes, or gloves; (3) cleaning, oiling, adjusting or repairing machines in motion; (4) unsafe operation of machinery; (5) poor housekeeping, such as slippery floors, objects left in aisles, improper arrangement of machinery; (6) unprotected or defective equipments; (7) removing, disconnecting, or misadjusting safety devices; (8) starting, stopping, or otherwise operating equipment without authority or without giving or getting the proper signal; (9) improper use of knives or other hand tools; and (10) delay in reporting minor injuries. The reasons why such accidents occur and methods of preventing them, as recommended in the two studies mentioned above, are given in the accompanying illustrations and captions.

Figs 1 to 7 were specially posed for TEXTILE WORLD in the plant of Alexander Smith & Sons Carpet Co.; Figs. 8 and 9 were posed at Judson Mills; and Fig. 10 is reproduced by courtesy of the National Safety Council.

SAFETY PROGRAMS to be most effective must have the whole-hearted support of both employers and employees. Such support is not difficult to obtain, since nowhere else do the interests of both come closer together.

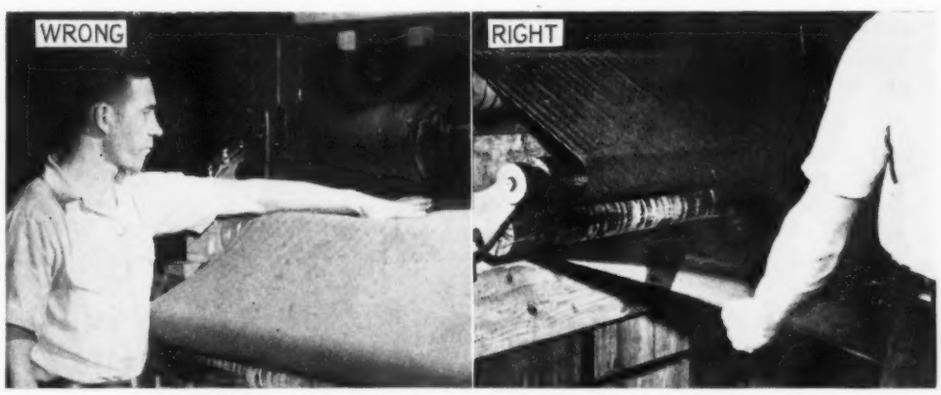
Due to the different conditions in the several branches of the industry and in individual mills in each branch, safety programs which have been worked out by individual companies vary considerably from one another. There are, however, certain fundamental characteristics common to all really successful accident-prevention programs.

First, safety must come from the top down; that is, the mill management must be safety conscious and must constantly stimulate, support, and participate in the safety program. Second, the safety program must be set up in such a way that the overseers or foremen constitute its backbone. Third, the program must be one which will have the sustained



Wrong: Don't clean running machinery. *Right: Stop machine and save a finger.*

3. Cleaning, oiling, adjusting, or repairing machines in operation usually is due to disobedience of orders by employees. To prevent these accidents, establish rules prohibiting such practices; call these rules to attention of employees frequently; use all possible means to encourage obedience to rules and to discourage disobedience because of haste, carelessness, recklessness, or stubborness; make certain that new employees receive instruction in proper methods of cleaning, oiling, adjusting, and repairing equipment.

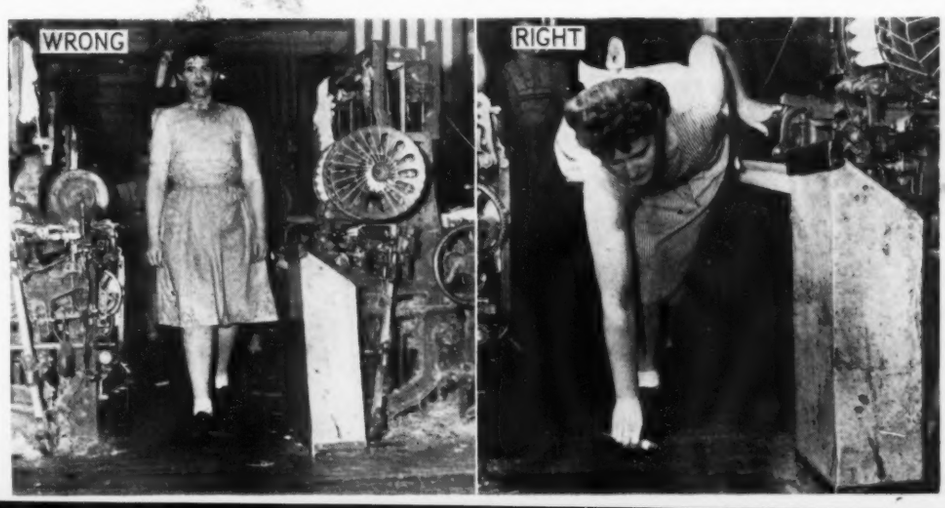


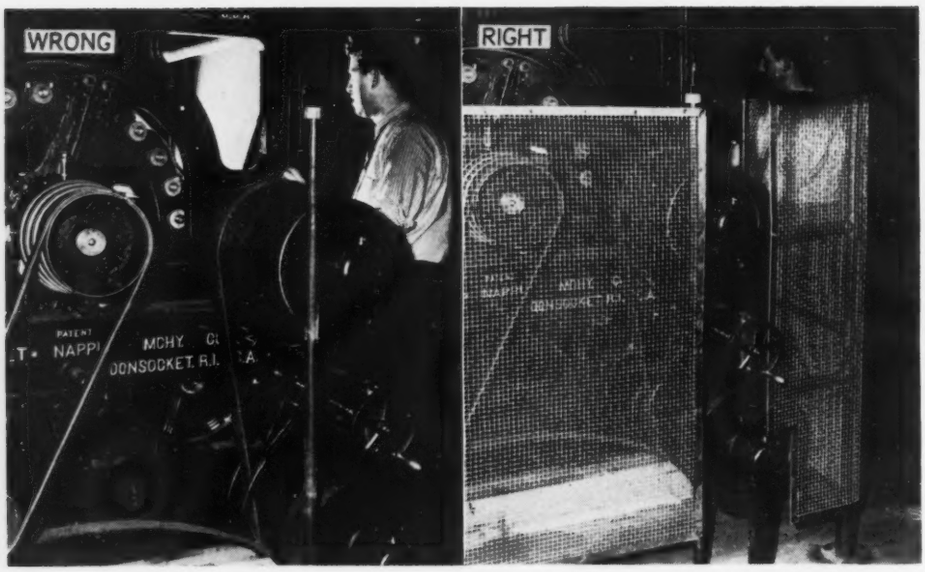
Wrong: Don't get hand near a nip roll. *Right: Guide cloth this safe way.*

4. Unsafe operation machinery is due to insufficient skill in operating equipment, and disobedience of orders or carelessness on part of employees. To prevent accidents from these causes, instruct employees particularly new employees in proper operation of equipment; provide instruction sheets showing correct method of operating machines.

5. Poor housekeeping is due to inadequate or incorrect cleaning, lubricating, maintenance, and lighting procedures; to cramped and congested aisles and working areas; to lack of suitable containers for supplies and machine parts; and to untidy habits of employees. To prevent accidents from poor housekeeping, check cleaning and maintenance schedules; correct any conditions which allow floors to become wet or slippery from oil, water, etc.; provide floor scrubbers and other cleaning equipment; repair loose boards, and holes in floors and stairs, provide containers for bobbins, quills, machine parts, and other small objects; rearrange equipment if necessary to avoid crowded aisles and work areas.

Wrong: Don't leave bobbins on floor. *Right: Pick them up and prevent a fall.*





Wrong: Don't have unprotected machinery. *Right: Guard all belts and gears.*

6. Unprotected or defective equipment is due to lack of safeguards and adequate system of preventive maintenance. To prevent accidents from these causes make survey of each piece of equipment in plant; install safety devices wherever needed; institute plan for regular inspection of equipment and prompt repair of defective machines or parts.

interest and cooperation of the employees.

Many textile mills today have well-balanced safety programs. But the records show that in many other plants the programs are far less effective than they could be if they were set up properly. Fortunately, there are in existence several organizations from which textile mill executives can obtain aid in establishing and maintaining accident-prevention programs. Best-known of these is the National Safety Council. Among the services available to members of the Council are included expert consultation on accident protection, safe-practices pamphlets, safety posters, a monthly publication dealing with safety problems and policies, safety movies and film strips, and regional conferences. The Council is a non-profit, non-commercial association, with membership dues based on the average number of persons employed by member companies.

Under the sponsorship of the National Safety Council, the War Production Fund to Conserve Manpower has been launched by a group of leading industrial executives to curb increasing losses in war production due to industrial accidents. The Manpower Fund will seek the extension of effective safety programs in plants not now adequately protected. In addition, research activities at the Council will be expanded to keep management

7. Removing, disconnecting, or misadjusting safety devices usually is due to disobedience of orders or lack of knowledge by employees. To prevent accidents from these causes, establish rules prohibiting unauthorized tampering with safety devices; post rules conspicuously; set up penalty system for infraction of rules.

Wrong: Somebody removed the safety sign. *Right: Post rules conspicuously.*

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informed on new safety problems in war production. Operation of the program for two years will cost $5,000,000, to be raised through subscriptions from industrial concerns.

Among other sources of information and assistance on accident prevention are the U. S. Department of Labor, State Department of Labor, State Industrial Commissions, American Management Association, National Society for Prevention of Blindness, insurance companies, trade publications, educational institutions, and manufacturers of safety devices and other equipment. In June, 1940, the Secretary of Labor created the National Committee for the Conservation of Manpower in Defense (now War) Industries. Serving on a voluntary basis, this committee includes safety experts from private industry, representatives of organized labor, and State officials administering safety and health laws. Its principal objective is to sponsor and supervise plans whereby every industrial establishment operating under Government contract would have available, without cost, information and expert service to assist it in developing safety programs. At present more than 400 industrial safety experts in all parts of the country are available as special field representatives for safety promotion work in plants engaged in the production of war materials.

As soon as a company is awarded a Government contract, it is informed by the Public Contracts Division of the Department of Labor of its obligations under the Walsh-Healy Act of taking proper safeguards to protect workers from injury. The employer is also informed of the availability of a field representative of the national committee competent to assist him in discovering and correcting hazards, in organizing a safety program, and in setting up shop safety committees.

The National Committee for the Conservation of Manpower in War Industries, in cooperation with the United States Office of education, has also established courses for training foremen and other key supervisory employees in the techniques of organizing safety programs among workers under their supervision. The instruction is offered by experienced and practical safety engineers. The courses generally extend over a period

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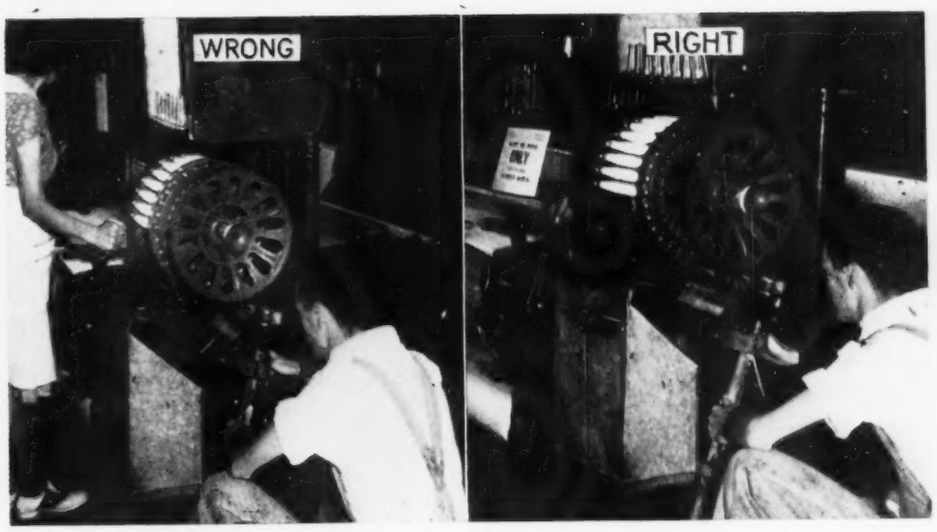
of 16 weeks. The courses were first offered during the autumn of 1941 in 12 engineering colleges located in important industrial areas throughout the country. About 5,000 students were graduated from nearly 200 separate classes. Enrollment in spring courses exceeded 12,000, and it is estimated that during the next 18 months approximately 30,000 students and key supervisory employees will receive instruction in safety and accident prevention work.

The day-to-day work in carrying out the program rests in the Division of Labor Standards of the United States Department of Labor, which acts as the clearing house for the activities of the National Committee for the Conservation of Manpower in War Industries. In connection with this work, the Division has issued a series of special pamphlets to assist the safety work of its field agents and to supply information on accident prevention to employers and workers.

THE ACCIDENT-PRONE EMPLOYEE. One phase of accident prevention which heretofore has received practically no attention in the textile industry is the problem of the accident-prone employee. Recently, however, United Merchants & Manufacturers Management Corp. has made a study of that problem, has instituted tests which measure accident-proneness, and has segregated accident-prone employees from high-hazard occupations. Executives of that company believe that these steps will result in the prevention of at least 50% of the accidents which continue to occur after an accident-prevention program of the usual type had been put into full operation. Obviously, the possibility of preventing 50% of so-called "unavoidable" accidents merits careful consideration.

In normal times, the safety program should constantly point out the value of safe practices to the employee, not to the company. With the Nation at war, the program should appeal also to the patriotism of the employees. It should get across to the workers the fact noted by Howard P. Wall, of the Greater New York Safety Council—that man-power on the home front is a critical problem; that industrial casualties which hold back production are just as serious as killed and wounded fighters.



Wrong: Don't start loom without authority. *Right: Provide proper signal system.*

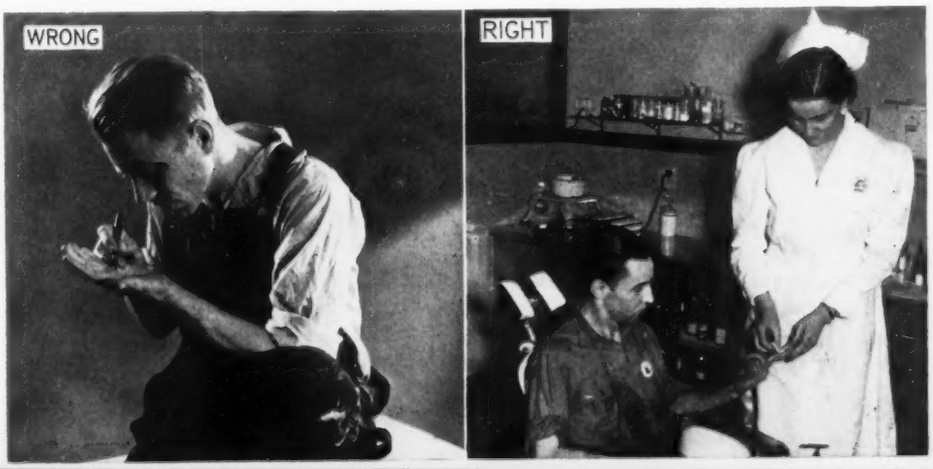
8. Starting, stopping, or operating equipment without authority or without giving or getting the proper signal usually is due to haste, carelessness, or disobedience of employees or to lack of signaling devices. To prevent accidents from these causes, install signaling devices where necessary; post rules conspicuously.

Wrong: Don't carry sharp or pointed tools in pocket. *Right: Carry them in a kit.*

9. Improper use of knives and other hand tools is due to lack of correct tool, or lack of skill by employees. To prevent accidents from this source, provide proper tools and instruct employees in their use.

10. Delay in reporting minor injuries usually is due to disobedience of employees. To prevent infections due to late reporting, provide adequate first-aid facilities; institute system to insure prompt reporting of and attention to minor injuries.

Wrong: Don't fool with minor injuries. *Right: Report promptly to first aid room.*



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Protection Against Let-Downs

By DOUGLAS G. WOOLF
Editor, Textile World

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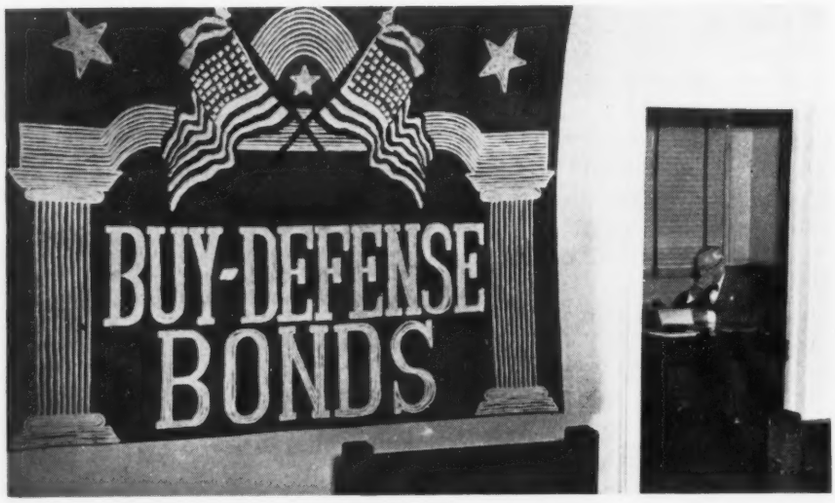


A particularly effective bond-campaign appeal. This is in the general office of Bibb Mfg. Co. at Macon, Ga. It is of fabric, and the lettering and figures are made of tufted yarns similar to the pattern on the bedspreads made in the southern mountain areas. At the right is a glimpse of W. D. Anderson, chairman of the board, in his office.

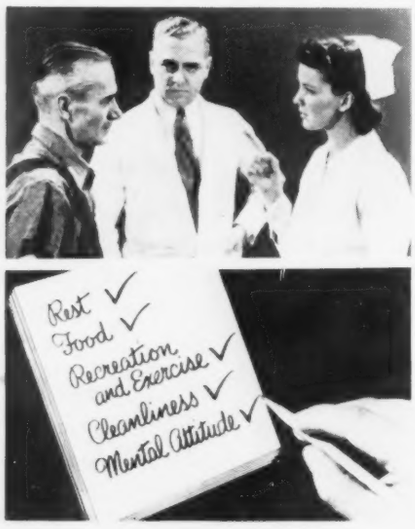
THIS IS A WAR OF MEN. That statement needs constant repetition, as an antidote to the glib phrase "This is a war of machines." To too many people, the latter statement brings into the mind's eye a picture of a Master Mechanician, who presses a switch and starts thousands of planes and tanks and guns in operation against the enemy. To too many people, it suggests the subordination of man to the machine.

Actually, the more completely mechanized warfare becomes, the greater demands it places upon man's skill and ingenuity and courage. A Molly Pitcher could step into the breach in the American Revolution, and fire a gun; it takes almost a Superman to operate the fiendish machines of war which man, prodded by devils like Hitler, has been forced to contrive today. A reasonably good physical specimen of a man could fly the planes of the last war; to command a bomber in the split-second formation which destroyed Cologne requires human precision of a hitherto unknown perfection. Modern machines of war, directed by anything less than that degree of skill, become boomerangs—not only more useless than idle cannon in the Revolution, but infinitely more destructive when captured by the enemy.

As it is on the battle-line, so it is on the production line. The incredible accomplishment which American industry has achieved by meeting and surpassing an equally incredible war-production schedule, has been due first and foremost to the perfection of man's skill. No Captain of Industry can press a switch and thus deliver planes and tanks and guns, any more than a General or an Admiral can press a switch and utilize these weapons effectively against the enemy. In each case, that hypothetical switch is connected with millions of wires leading to millions of men. Anything less than perfect performance by individuals in that multitude can short-circuit the result.

This is a war of men.

ON THE TEXTILE PRODUCTION-LINE, this is as true as on any other production-line. In fact, it is even more important, because textile manufacture has not been a precision industry, to the degree that the manu-



Because human energy is still the most important factor in war production every drive toward public-industrial health is significant. Herewith is a still from the first of a new series of health-education films prepared by Commercial Films, Inc., Cleveland, Ohio. This first film is entitled "Take Care Of Yourself" while those in production are: "The Cold Bug," "Food Keeps You Fit," and "Stay On The Beam."

Although the WPB and other Government agencies have devised excellent production-drive posters of a general type, more effect can be made of posters designed to dramatize the relation of the particular product of a specific plant to the war effort. Here is one of the examples of Pepperell Mfg. Co.'s job in this connection. Original poster is 37½x52½ inches.

facture of machine tools and armament and motors and planes has been. Thus there is more need for human tooling-up in our industry, if we are to continue to meet the unprecedented demands placed upon it.

Consequently, this section of TEXTILE WORLD's Textile Plant Protection issue covers the most vital of its four phases. In the three other sections we have considered (1) Protection Against Physical Damage; (2) Protection Against Sabotage; (3) Protection Against Lost-Time from Accidents. In this section, we consider: (4) Protection Against Let-Downs from Impaired Morale.

The toughest assignment in plant protection is this fourth phase: Maintenance of Morale. Toughest because it's intangible.

A manufacturer can build the highest fence around his plant, have all the modern gadgets with which to fight fire, build up an almost 100% safeguard against sabotage, create an efficient safety organization—and yet have nothing left but an empty shell as assurance for all-out production.

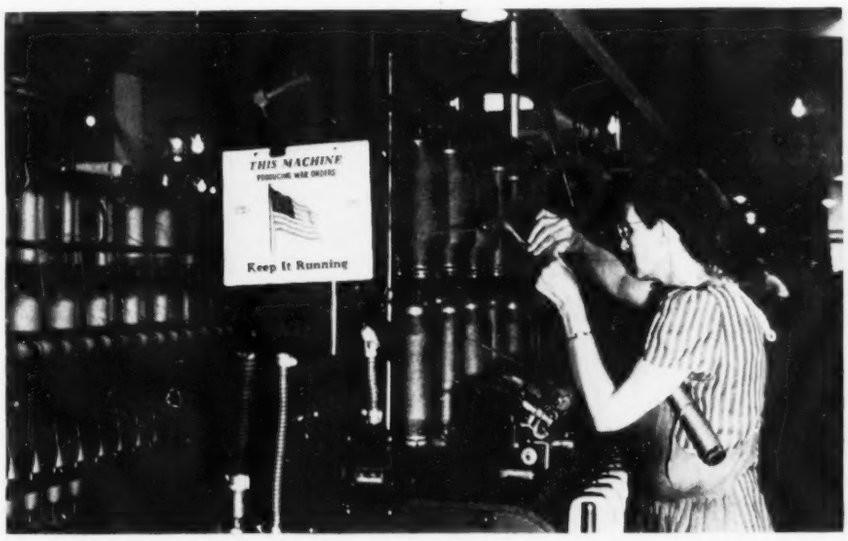
Why? Because every single step of the way in every phase of plant protection depends primarily on one factor: Men. And men represent the most serious shortage problem in the war effort, not even excepting rubber and copper and aluminum and gasoline.

Just remember that we are talking now, not about industrial relations in general, but about those relationships under the strain and stress of wartime conditions. Under those conditions, the normal worries which beset human beings become magnified hundreds of times—and thus represent an infinitely greater threat, than usual, to the continuity of the production-line.

Always harassed by the fear of sickness, accidents, unemployment, old-age and death, the man or woman at the machine now has additional and more fearsome possibilities. He or she has loved ones at the front, or in training, or soon to be called. He or she has a home which may be bombed during working-hours—and children who may be exposed, alone, to the panic and danger of such invasion. He or she has to meet unprecedented demands for speed and accuracy, under phychological conditions which by their very nature

Today's pressure requires more frequent intermissions to relieve the tension. Munsingwear, Inc., has installed a new milk bar and soda fountain in its plant in Minneapolis, Minn. Here some of the employees are enjoying an afternoon pause.

The "thermometer" idea is always effective in campaigns. Here a southern cotton mill has adopted it in its drive for 100% bond purchase by its employees. This is just one department; each department has its own "thermometer."



One method of making the war job a personal one: This machine is tagged as one which is producing war goods. "Keep It Running" is the slogan.

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tend toward slow-down and carelessness.

GIVEN THIS PARADOX, what can and must a textile manufacturer do about it?

To this writer, it seems that the employer must first of all assume the role of a non-patronizing, realistic guardian toward the members of his mill family. He must realize that each member of that family wants to do his or her bit in the national emergency. Consequently, he must orient the individual's job to the war effort. Specifically, he must:

1. Make graphic the relation of the mill's product to the needs of our Armed Services—by posters, by mass-meetings, by house-organs, and by all other available media.

2. Relate the importance of all employees' jobs to that of the services being performed by their relatives in the Armed Forces.

3. Translate the function of the company—their company—in terms of its enlistment in the war effort.

4. Convince—really convince—employees that the company is concerned with service to the country—not with profits.

This is no job for stuffed-shirts. Silence would be better than pontifical pronouncements. This is a job for human beings. The employer who does it perfectly rates an honorary degree as Doctor of the Humanities from any college in the land—which of course he will never receive. But he *will* receive the satisfaction that comes to them—and them only—who perform their immediate tasks to the utmost of their abilities.

BEYOND THESE BROAD PRINCIPLES, there are simple, every-day needs which cry for attention. Hot soup is often (possibly always) more potent than a speech from the company-president. Here are some of the homely little jobs which, if done right, can afford protection against slow-downs:

1. Keep an honor-roll of all employees, and relatives of employees, serving in the Armed Forces.

2. Establish departmental and individual incentives—*monetary* incentives—for outstanding production performance.

3. Make available non-interest-bearing loans for those families temporarily crippled by loss of members to the Armed Forces.

4. Create, or expand, nurseries for the care of children whose parents are forced to leave them alone during working-hours.

5. Provide relief-periods, through music, or exercise, or community singing, to break down the pressure of forced production.

6. Provide nourishing food during such intervals.

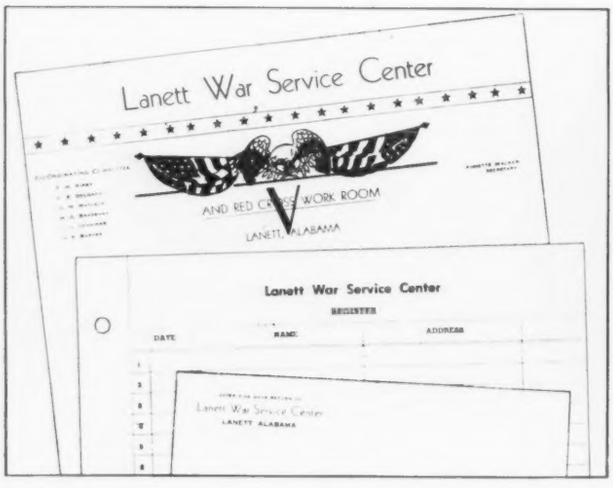
7. Devise—or expand—a suggestion-box, so that employees may find an outlet for their desire to help win the war.

8. Arrange for vacations—or for extra pay in lieu of vacations.

9. Convert the first-aid station into an efficient depot for complete medical attention.

10. Utilize the plant-organ as a channel for transfer of information on all phases of the war-effort to em-

Dedication of Employees' Service Flag at Arlington Mills, Lawrence, Mass. Left to right, Mr. and Mrs. John Maginnis whose son George, an Arlington employee, disappeared into the hills of Bataan; Secretary Sidley of the Employees Service Fund; Robert Saltonstall, personnel director.



This is a real war service job. At this plant, as in each of the other plants of West Point Mfg. Co., there is a War Service Center with a full-time secretary to handle the work and with reading and writing rooms provided for the boys in service. Each employee who goes into the service is paid a $20 bonus. The secretary writes personal newsy letters to them and sends them the local papers. The boys also send in pictures of themselves which will be used in a war Memorial Manual.

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War doesn't seem to be hell in this instance. The young man passing the food to Deanna Durbin is Corp. Hildebrand, a former employee of Pepperell Mfg. Co. and now employed by the United States Army at Ft. Belvoir, Va., where Miss Durbin recently sang at an entertainment program. This picture was used as the front cover of the May issue of *The Pepperell Sheet*, as one more method of tying together the work of the employes at the machines and those now on the battle line.

ployees. (If you haven't a plant-paper, this is a good time to start one. Even a mimeographed sheet would do.)

11. Get the entire mill family enrolled in a salvage campaign and a war-bond campaign. The best protection against negative impulses is the doing of positive jobs.

12. Strengthen your training programs, tie them in with local educational agencies where practical, in order that a new supply of skilled labor may be available, and that workers now employed may sharpen their skills.

13. Fly the American Flag every day.

14. Organize share-a-car movements and supervise the entire home-to-plant transportation system in order to reduce to a minimum the lost-time and friction which the gas and tire shortages threaten.

15. Encourage short vacations and sound forms of relaxation to prevent strain from over-work.

16. Train women to replace men in operating executive jobs, as the needs arise.

17. Encourage the planting of Victory Gardens.

18. Campaign against waste and carelessness, representing the waster as a saboteur.

19. Have a continuing health campaign, designed to stress the increased importance of keeping fit, if the war is to be won.

20. Have regular meetings of the operating executives to check on each phase of this morale-building program, and to make sure that no opportunity is being missed to guard against curtailed production through let-downs.

An indispensable part of the morale job in wartime is keeping very much to the fore the names and progress of employees who have gone into the armed services. Above is an effective Honor Roll used by Spartan Mills, Spartanburg, S. C.

These are only a few of the many possibilities. The main job is to recognize all the peculiar needs in each plant, and among all individuals, and to serve those needs without ostentation, but with complete humanity.

On the pages of this section are pictures and word-pictures of what some companies are doing. Many companies may be doing even more. If so, we would like to hear about their procedure, and to present it in subsequent issues.

We have all heard about man's inhumanity to man. The world is a glowing hell today, in a demonstration of that fact. Is is not possible that, by individual and concerted demonstration of man's humanity to man, we may realize deep plus-values simultaneously with the achievement of winning the war?

Tying in the job with the war. This is one of a series of posters used by Pacific Mills—reprints from their advertising—which are displayed around their plants and which have been particularly popular among the employees.

Gordon Hall, converted by Dominion Woolens and Worsteds Limited at their Hespeler, Ontario, plant, as a residence for out-of-town girls who work night shifts: girls whose homes are far off but who want to do their bit in wartime.

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Protection Against Sabotage

By EARLE MAUDLIN,
Southern Editor, Textile World

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IT IS THE DUTY of every company which is engaged in war work to provide adequate protection against any act or accident that might interfere with continuous production. This calls for measures to prevent sabotage. Although the textile industry is less vulnerable than are some other industries to the work of the saboteur, many individual textile mills are performing important functions; and it is necessary for them to make certain that nothing will delay or stop the ever-increasing flow of textiles for our armed forces. The extreme measures that are warranted in some branches of industry are not needed in all textile plants—perhaps in none of them. Certain basic precautions should be taken, however, to prevent any subversive act that would disrupt production or render manufactured goods unsuitable for military use.

Each program for protection against sabotage must be worked out to suit the needs of the individual mill. Local conditions govern what should or should not be done. Following are outlined the steps which have already been taken by various textile companies plus suggestions from authoritative sources as to further steps that are necessary or advisable under certain conditions. From this outline, the management of any individual company can draw up a program fitted to its own specific needs.

Guards and watchmen should be carefully selected and trained. They are the custodians of valuable property, machinery, raw materials, manufactured property—even lives. Men of keen intelligence, good power of observance, courage, and calm judgment are needed for this work. An important task, such as this, should not be entrusted to aged, infirm, or disabled persons, nor to those of unknown antecedents. Uniformed guards —properly trained, properly armed, and vested with proper credentials and authority—lend an air of authority and seriousness to the effort of guarding against any unfavorable act. Watchmen's patrols should be worked out carefully to insure complete coverage of the plant at least once an hour, and to avoid having the watchmen make their rounds with such regularity that their appearance at a given place can be predicted. Watchmen's clocks should be provided and station boxes and alarm systems should be installed at strategic positions. The value of well-trained police dogs to supplement guards and watchmen has been suggested.

Photo by Coxe

There should be only one entrance to the plant for employees and visitors; a uniformed and armed guard is stationed here to make certain that only persons authorized to do so enter the mill at any time—day or night.

Training of guards and watchmen should include instruction in protecting property, preventing sabotage or mischief, reporting or apprehending persons who are acting suspiciously, alert and intelligent action in case of fires, preventing theft, preventing unauthorized entrance, proper care and use of firearms, and the important matter of treating as confidential all business of the company. Instruction in the rudiments of first aid is desirable. Guards and watchmen should be familiar with such mechanical equipment as fire pumps and other fire-fighting equipment, signal systems, steam and water supply valves, lighting switches, and fuse boxes. Guards and watchmen should be provided with the names of two or more superiors who can be reached quickly by telephone or messengers.

Whenever practicable, there should be only one entrance gate to a plant for employees and visitors, and one gate for trucks. Additional emergency exit gates should be provided however. All employees and visitors should be required to enter the gate under the supervision of proper guards. Where a large number of men must pass through in a relatively short time, several guards can be used and multiple single-file lines admitted. This subjects each individual to personal inspection.

A check-up of the history of employees is considered to be of utmost importance in preventing sabotage, according to Harry Desmon Farren, in his book, "Sabotage, How to Guard Against It." The past history, the affiliations, and the family connections of every employee and prospective employee should be carefully investigated and complete records kept on file by the personnel department. Applicants should not be employed if

Photo by Coxe

Watchmen's clock stations should be installed at strategic positions throughout all buildings of the plant.

Fingerprinting of all employees is mandatory in all textile plants which have Government contracts.

there is any danger that by so doing a troublesome or dangerous element will be introduced into the plant. Investigators should check carefully the country of birth, racial origin, war sympathies, membership in fraternal orders, and temperament of each employee. The associations and habits of each key man should also be under constant surveillance. For instance, a man who is in debt is the most likely or vulnerable target of the outside saboteur, who is generally well-supplied with funds that might be used in an influential manner. Credit organizations set up with facilities for checking the antecedents of applicants and employees and furnishing complete histories have been functioning for some time. One such organization, for example, has offices in 105 cities in this country and Canada. As a rule, companies of this type are better able to carry out these investigations than are individual textile mills.

Fingerprinting of all employees in plants working on Government contracts is mandatory. From the president of the firm to the newest worker, all must have their prints on file with the State or regional office having jurisdiction. Duplicate copies are also filed at F.B.I. headquarters, in Washington. This provides a means of definite and permanent identification, and at the same time serves as a deterrent to undesirable persons gaining access to the plant. Most of the larger mills have found it advisable to install fingerprinting equipment, rather than to rely on outside agencies to do finger printing.

Identification badges should be provided for all employees and visitors. No one should be allowed to pass through the entrance until he or she has been properly identified, and no one should be allowed in the plant without an identification badge. Badges for employees should carry the employee's name, photograph, signature, etc.

Fencing should be installed wherever layout of plant permits. On account of the need of steel for other war purposes, it is recommended that wooden fences be designed when the present supply of non-climbable types of steel fences is exhausted. Fences should be at least 7 ft. and should be

Prospective employees should be carefully investigated and complete records of every employee kept on file by the personnel department. Here an applicant for a job is being interviewed by a member of the personnel department.

Photo by Coxe

Fences should be at least 7 ft. high and protected at the top by several strands of barbed wire; at night they should be lighted by lamps mounted on poles placed about 10 ft. from the fence on the mill side; guards are located in shaded zone.

Courtesy General Electric Co.

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protected at the top by several strands of barbed wire. Wooden fences should be wire bound, with strands of wire on the inside thoroughly stapled to every picket so that no single picket can be easily pried loose. All fences should be located far enough from the buildings so that trucks, fire-fighting equipment, etc., can be operated within the inclosure; also, to prevent intruders from approaching too close to the buildings.

For use in conjunction with steel fences, a system of tiny robot sentries has been developed to supplement human guards. This system is particularly advantageous at night and during storms or fog, when visibility is poor.

Where buildings are directly on the street line, and in other locations where a fence is not practicable, screens can be placed at the windows. The screens should be of such design that the windows cannot be used for ingress and egress, and that objects inside the building cannot be seen from the street.

No parking of cars should be allowed within the fenced in inclosures. Well-lighted parking lots for cars of employees, as well as visitors, should be provided at convenient location outside the inclosure and well removed from the buildings. If possible, these lots should be within the visual range of the guards.

Lighting of fences, walls of buildings, and entrances is an important measure, and one which has received much study by lighting engineers and by manufacturers of lighting equipment. Luminaires of various designs and flood lights for guard towers have been developed to meet the requirements of any type of plant.

A typical system of protective lighting consists of a series of lights approximately 125 ft. or 150 ft. apart mounted on poles placed about 10 ft. from the fence on the mill side. These lights are so directed that the fences and area immediately beyond are strongly illuminated; glare is directed in the eyes of anyone approaching the fence; and the guards are located in a shaded zone.

Inspection is one of the important factors in preventing sabotage. First, there is inspection of all raw materials, packages, etc., entering the plant; contents of each truck might well be inspected by the guards at the time the truck enters the inclosure; car-load shipments can be inspected while the cars are being unloaded. Lockers of employees should be inspected at unexpected intervals. Machinery and tools should be inspected frequently to insure against slow breakdown by sabotage. Purity of water for drinking, process work, and steam should be checked frequently. If food is served in the plant, its quality and purity should be under constant surveillance. Arson is a common form of sabotage; hence fire alarm systems and fire protection equipment should be inspected frequently. (Protection against fire is discussed in more detail in another article in this section.)

Disposition of all waste paper, discarded correspondence, orders, miscellaneous waste, etc., is an important detail which should not be overlooked. It is recommended that all such papers be disposed of by means of an incinerator, or paper shredder, and not be allowed to get outside the building in recognizable shape. Many acts of sabotage, and espionage, have been traced to carelessness or neglect in this respect. A trusted employee should be in charge of the operation.

The power plant, the transformer station, and the water supply are particularly vulnerable spots in textile mills. Special guards, extra fences, or other precautions may be necessary to insure uninterrupted delivery of power and to prevent pollution of the water.

The fact that to date there have been comparatively few authenticated acts of sabotage in the textile industry should not lull us into false security. The saboteur strikes without warning and when least expected. It is necessary, therefore, for textile mill executives not only to take the necessary precautions for safeguarding their plants against any attempts to impede the war effort by sabotage, but to make certain that those directly charged with the safety of the plant maintain their vigilance as long as any possible danger exists.

The arrest last month of two groups of saboteurs who had been landed on our shores from submarines affords proof that the danger is real and that adequate measures to prevent sabotage are essential.

Photo by Coxe

Well-lighted parking lots should be provided at a convenient location outside the inclosure and well-removed from the buildings.

Case Studies of Plant Protection

A NUMBER OF TEXTILE MILLS already have taken effective steps to protect their plants against air raids and sabotage, to prevent accidents, and to maintain employee morale under war-time conditions. Following are descriptions of the way in which four well-known companies have organized for plant protection. These actual case studies supplement the four preceding articles, which discuss in considerable detail each of the several ramifications of an all-out program for textile plant protection. Although the plans adopted by all four companies have some points of similarity, there are, nevertheless, certain marked differences, depending on geographical location of the plants and other factors.

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Plant Protection at Botany

THE PLANT DEFENSE ORGANIZATION of Botany Worsted Mills, Passaic, N. J., numbers approximately 1,100 men and women employees. Training classes for all employees are being held constantly so that the entire mill force will feel a part of the defense organization and, from a practical standpoint, will be drilled in what to do in the event of an emergency. Seven companies have been established—one in each of the seven principal mill structures.

The organization is established along military lines. A. W. Talbot, chief engineer of the plant, is commander of the defense organization. W. E. Fick is chief of the maintenance of service squads. Uno Orie is general defense commander. Eugene Klepatsky is chief fire warden. Each of the seven companies is divided into three sections, one for each 8-hr. shift in a 24-hr. day. The officers are chosen by the heads of the seven different divisions of the mill, and in each case they are the top-ranking men in the departments. The captains appoint their own lieutenants and select the personnel of the individual squads. Each company is complete within itself and operates under a captain and his lieutenants.

Individual squads vary in size, numbering from 50 to 125 people, according to the size and requirements of the departments in which they operate. Headquarters of the defense organization for the entire plant is established in the engineering building and operates on a 24-hr. schedule.

A system of warnings and alarms has been devised which will be sent by telephone over the mill loud-speaker system, which has been recently installed. Notice of air raids will be received from defense headquarters. At the first alarm the mill telephone system will automatically become a second line of communication to the call system. These warnings will come in three sections. The first will be preliminary and will mean only that strange aircraft are headed in the general direction of the mills. The third warning is information that there is possibility of aerial attack in the Botany area. Present arrangements are to send these two first warnings over the call system. The third and final warning will go over both the call system and the warning whistle.

Blackout Practice—Because of the large glass area in the mill, it has been impossible to tape the windows or to black them out during night-shift operations. Arrangements, however, have been made to blackout the entire mill in the event of any air raid alarm. This procedure is as follows:

A direct wire has been established between police headquarters and the office of the chief engineer of the mill. Immediately upon receipt of

Rehearsals of the Botany defense organization are held at intervals; here stretcher bearers carry a victim to the plant hospital.

A fire squad mans the hose and special incendiary bomb extinguisher; a guard and morale officer accompany the squad.

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word of an impending air raid or other eventuality, the chief engineer will send out the first alarm over the annunciator system which has been established throughout the mill.

At the first alarm telephone listeners will station themselves at the telephones, which will all be cleared for emergency action. With them will be the messengers. The first alarm is intended to see that the complete defense organization occupies its stations and makes all arrangements for eventualities. The second alarm means that all employees are prepared to leave the building and that mill operations cease. The third alarm will be followed immediately by putting out every light in the mill area, except special emergency lights which will mark exits for employees and first aid stations.

Water System and Power Plant—Botany has its own water supply system which is completely guarded 24 hr. a day. Botany also has its own power plant, which is also guarded. Armed guards are on duty at all times, and these areas are open only to qualified employees who have business there.

The Botany defense plant organization is designed to provide a skilled and trained group, whose duties are primarily to prevent panic or disorder in the event of an enemy air raid or any other enemy military action. Its secondary and equally important function, of course, will be to prevent fires, repair any damages that may occur, and to render first aid to any persons who may be injured or wounded.

Workers have been instructed to remain at their tasks until notified otherwise, except on certain upper floors of the mill buildings. These floors, which might be vulnerable in the event of attack, or become dangerous as a result of any military activity, will be emptied. Workers on these floors and in the buildings affected have been notified and have been instructed to proceed and by what exits they should leave on the final warning signal. Evacuation of these floors will, of course, be under the direction of the particular plant company commanded by the plant captain and his lieutenants.

ARMBANDS INDICATE DEFENSE TASKS. In order that the specific duties of the officers and members of each plant company may be clearly indicated to employees, members have been furnished with arm bands or brassards bearing special emblems which they wear on their right arms. Employees have studied the insignia on these brassards so that they are thoroughly familiar with their meanings. The different symbols are shown at the beginning of the paragraphs below. The following definitions explain more fully the duties to which each wearer of the brassards is assigned:

The Morale Officer is charged with maintaining order, preventing hysteria and excitement, and seeing that any evacuation from buildings that may be necessary is conducted in an orderly manner.

The Spotter acts as a lookout to report on any approaching enemy aircraft. Spotters have been selected because of their keen eyesight and agility. They are constantly on duty on roofs and in strategic parts of the mill enclosure, maintaining a watch against interlopers or anyone who may be wandering around the plant area without proper identification.

The Listener is charged with manning the telephone, seeing that the line is kept clear, and answering and forwarding any inquiries from defense organization headquarters in the engineering building.

A Messenger is assigned to the captain, lieutenant, spotter, and listener. He is charged generally with delivering any messages between headquarters and officers in charge of the different defense companies, and with maintaining contact with the personnel of his own plant company.

Guards are responsible for guarding exits and seeing that they are kept clear so that evacuation of personnel may proceed in an orderly manner. Guards have been selected because they are judged to be calm and competent. Their chief duties are to prevent hysteria and to guide employees to the proper exits. In addition, they will work with the stretcher bearers in caring for casualties.

Service Squads are responsible for making any repairs which may result from any cause. The service squad is provided with special repair equipment for emergency purposes.

The Fire Squad is charged with the duty of extinguishing any fires which might arise from any cause. For this purpose, they have been provided with necessary equipment and materials for extinguishing fires.

The fire defense workers are all given a course of training by Eugene Klepetsky, chief fire warden, a former fireman. The course consists of a series of lectures, including illustrations in slides and motion picture films showing the best methods of fighting incendiary and demolition bombs. Each of the first defense squads is given actual demonstrations in fire extinguishing with the use of stirrup pumps, fire hose, and sand for extinguishing incendiary bombs.

Each fire squad is divided into two sections, inside and outside fire fighters. All members of the squads are equipped with portable fire extinguishers and their equipment also includes portable and shoulder stirrup pumps. The outside fire fighters are stationed on the ground and on the roofs of the buildings. All roofs have been equipped with piles of sand and shovels placed at strategic intervals.

Stretcher Bearers are charged with the duty of removing any employee who may be injured as a result of blackout or other cause. Stretcher bearers have been trained to work with the first aid workers and in the event of casualties to carry any injured to the first aid stations which have been established throughout the mill. At present there are fourteen such stations.

The First Aid Squad is charged with the duty of rendering first aid to any injured or wounded. All first aid workers have been given the regular Red Cross first aid course by doctors and nurses attached to the Botany hospital. They are all equipped with complete first aid kits. Some 300

(Above) Simulating hysteria, one of the workers is cared for by a first-aid attendant and a morale officer. (Right) After witnessing a blackout rehearsal by the Botany defense organization, Army officers inspect the plant hospital; left to right are: Major General Irving J. Phillipson, commandant of 2nd Corps Area; A. W. Talbot, chief engineer Botany Worsted Mills; Miss Bridget Convery, the nurse; Col. C. F. H. Johnson, president of Botany; Brigadier General R. K. Robertson, provost marshal of 2nd Corps Area.

additional first aid workers who will join the defense squad at the mill and who will also become first aid workers in the neighborhoods in which they live are now undergoing training.

The first demonstration of the efficiency of the Botany defense system in operation was given recently for Major General Irving J. Phillipson, commander of the Second Corps Area, with headquarters at Governors Island, N. Y., who made a tour of the plant with Colonel C. F. H. Johnson, president of the company. They were accompanied by members of General Phillipson's staff, including Brigadier General R. K. Robertson, provost marshal of the Second Corps Area; Major Walter Sullivan; and Major E. F. Grunewald.

The demonstration was given in the burling and mending department. The evacuation of the fifth floor was completed quietly and in perfect order within 3 min. after the final warning was given over the loudspeaker system. The competent order in which the officers and personnel of the plant defense organization went to their posts and executed their tasks and the manner in which employees departed by prescribed exits made a deep impression upon the military contingent which witnessed the test. It was of special interest to General Phillipson, as commander of the military area in which Botany is located; and to Brigadier General Robertson who, as provost marshal of the area, is charged with protecting important defense plants, such as Botany, against all enemy dangers, either of attack or sabotage. The demonstration, therefore, was an excellent beginning for what is regarded as the most completely organized defense protecting group in the Passaic industrial area.

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Plant Protection at Bibb

By THOMAS O. OTT, Jr.,
Southern Editor, Textile World

BIBB MFG. CO. has found it comparatively easy to set up a system of plant protection and to maintain the tempo first of defense production and now of war production. This is due largely to the company's frank and enlightened relations with its employees. Simply stated, the Bibb policy is to make the various plants and communities of the company as safe and comfortable as possible with modern equipment and procedures, and to encourage any practices that will add to the happiness and contentment of the workers in the mill and out of the mill. Among the pre-war community activities in which Bibb engaged were assistance in securing first-class schools, churches, recreational facilities, and health services for its workers and their families. In addition, the company strove to encourage good citizenship in its broadest sense. With the country's entrance into the war and the company's entrance into war work, it was necessary only to build on to this sound framework additional measures for protection against fires, accidents, and slowdowns, and new measures for protection against sabotage.

PROTECTION AGAINST SABOTAGE. Even before Pearl Harbor, recommendations had been made to the management for measures to be taken for protection against sabotage. With the outbreak of war, these recommendations were reviewed and all measures necessary under the circumstances were taken. As Bibb Mfg. Co. has various types of plants which are widely separated, some in or adjacent to large cities and others in small communities, each plant and community has worked out its own program of plant protection, depending on existing facilities and conditions.

Fencing was found to be adequate with minor changes, since all the mills have fenced property with few exposed walls. Lighting of fences, entrances, and plant exteriors was considered satisfactory except in a few places.

Additional watchmen were engaged and armed guards were placed at the main gates. Special instructions were given these men as to the nature and seriousness of their duties, with special attention to the detention or apprehension of improperly identified persons who might attempt to enter the plants. There are watchmen and guards on duty 24 hours a day, 7 days a week wherever necessary. To supplement this, the personnel departments have installed facilities for fingerprinting and photographing all

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A uniformed guard is stationed at the entrance.

A separate entrance is provided for trucks.

employees. This was recommended and approved by the Army and the F.B.I. Fingerprints are filed with the F.B.I. to permit detection of persons considered dangerous to our war effort. After a new employee has been interviewed and fingerprinted, a photograph is taken with an identification symbol, and is made into a badge for the employee to wear. No person can enter a Bibb plant without an identification badge. Watchmen and guards are selected from the communities or live in the communities and either know or soon learn the people working in the mills. Of course, new employees are identified by the badge.

Fire protection equipment has been increased and improved where necessary, with emphasis upon the training of foremen and employees in the handling of this equipment to extinguish fires and locate valves to prevent water damage. Since the insurance companies have always required a high standard of performance of the fire-fighting facilities and organizations, this has not been a major problem.

Instructions have been given the employees in the form of lectures and movies and pamphlets on the methods of extinguishing incendiary bombs. Civilian defense is organized in the various mill villages, with the usual air raid wardens and fire wardens, training in first aid and home nursing, etc. One of the community houses with kitchen facilities has been designated and organized as a feeding station in case of emergency. All these activities are tied in with those of the city, town, or county in which the mill is located, so that adequate cooperation may be assured in an emergency.

PROTECTION AGAINST ACCIDENTS. The Bibb management has long realized the seriousness of lost-time accidents and even minor injuries. For many years overseers and foremen have been instructed in good safety practices and workers have been educated as to the cost to themselves and the company of lost-time accidents or illness. Employees have been required to have immediate attention given to the slightest injury and to make reports of all accidents. Recently the safety program has been stepped up still further. J. J. McKay, Jr., has been delegated by the management to drive for safety education and prevention and to keep detailed records of the cost of safety to the worker and to the management. Many safety posters are placed on the bulletin boards; beginning in October, 1941, a safety column has been run in each issue of the *Bibb Recorder*, Bibb employees house organ. Mr. McKay is now preparing a complete safety manual to be distributed to all employees to instruct them in the proper safety practices for any particular job or department. It is believed that the manual will be of special help in preventing accidents to new employees.

Guards for belts, gears, motors, and other dangerous moving parts of machine are standard equipment in the Bibb plants; and the safety director, the management, and the supervisory forces are constantly on the alert to detect new hazards and to make improvement in protective devices.

PROTECTION AGAINST LETDOWNS. In our present war economy letdowns in production or morale may be due to one or more of several factors. These include the management, the employees, the mechanical equipment, the plant layout, or shortages of raw materials, supplies, and power.

Careful inspections have been made of the physical facilities of the Bibb plants by such agencies as the Army,

Fingerprinting an employee in one of plants of Bibb Mfg. Co.

Making a photograph to be placed on employee's identification badge.

More use is made of baseball fields and other recreational facilities since gas and tire rationing have gone into effect.

Safety posters are placed on bulletin boards throughout Bibb plants as a part of the accident-prevention drive.

the F.B.I., insurance companies, and other companies that are concerned; and recommendations have been made to the executives to assist them in preventing anticipated slowdowns. Many of these measures have been put into effect or are being considered. Surveys of equipment and plant layout have been studied in relation to possible bottlenecks to production and operation in the event of damage to parts of plants.

Bibb policies which have resulted in a high employee morale were mentioned previously. Because of these policies, there is no necessity for pep talks and posters to boost morale. Government orders going through the plants are identified by tags, and the employees take special pride in working on these orders. Throughout the organization a singleness of purpose is apparent—everyone is conscious of the company's contribution to the war effort and is eager to do his or her part toward winning the war.

To relieve the strains and counteract the restrictions of a war economy, the facilities for relaxation, change, and recreation have been expanded in many of the communities; and employees and their families are encouraged to take part in community activities. Since gas and tire rationing have gone into effect, more use is being made of playgrounds, ball parks, golf courses, auditoriums, community houses, club houses for men and women, and swimming pools. The Boy Scouts, the Girl Reserves, the Civilian Defense Corps, the Red Cross, and other war activities are additional community interests which bind the people closer together. Many of the employees are cultivating victory gardens at home or on company property. Bibb employees living in cities are encouraged to take part in civic activities and to make use of the recreational facilities which are available. For those living in the smaller self-contained communities, such as Porterdale, the company naturally does more to provide facilities for recreation and social service.

Bibb has adopted the pay roll allotment plan for purchase of war bonds and is now making arrangements to issue the bonds directly to its employees in order to speed up their issuance and to relieve banks and post offices of the clerical work.

Protection against accidents, fire, and slowdowns at Bibb Mfg. Co. has been largely a matter of extending and adapting time-tried policies to wartime conditions. Superimposed on this are emergency measures for protection against sabotage. The employees feel that they are making a real contribution to the war effort and have cooperated wholeheartedly with the management in the moves to prevent loss of production from any avoidable cause.

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Plant Protection at Wyomissing

By J. EARL RUTHARDT,
Editor, The Yarn Carrier

CAN WE BE BOMBED? The answer may be suggested by the War Department in designating the Atlantic seaboard from Maine to Florida and 300 miles inland, as a military area.

Since Textile Machine Works, Berkshire Knitting Mills, and Narrow Fabric Co.—the three companies comprising the Wyomissing Industries—are in this area and two of our three plants have been converted to vital war production, we may consider ourselves vulnerable to air attack. However, a surprise attack will not find the Wyomissing Industries unprotected. We have been quietly preparing for the day when we might be subjected to enemy air bombing by organizing and training an alert and disciplined defense corps for each plant, consisting of air raid wardens, roof watchers, first aid workers, bomb demolition and rescue squads, and auxiliary police and fire fighters. Each group has a definite outline of what is expected of them in a crisis.

Thousands of dollars worth of equipment has been purchased for use by the defense corps, including: spray pumps, steel helmets, gas masks, additional fire fighting equipment, such as fire extinguishers, hose and special spray nozzles for regular fire hose, portable tanks for water storage, tarpaulins, special trucks to hold sand and shovels which may be moved anywhere on the floor, extra water pipe extensions and installations, sand, buckets, and shovels.

Heading the organization as plant defense coordinator is M. M. Hepler, assistant plant engineer, who in the event of an air raid has complete charge of the protection of the entire industries. Each plant also has its

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own coordinator. Mr. Hepler's post is in Building 107—the Gate House—the nerve center of our industries, from which will be directed the action of the plant defense corps.

Our fire fighting forces consist of two units—the regular or specialized, and the auxiliary fire fighting personnel and equipment. The regular firemen and equipment are subject to call only from the plant defense coordinator. The auxiliary firemen consist of strategically located groups of specially trained men, whose duty it is to dispose of all incendiary bombs and extinguish the resulting fires. To aid them in their work, hoses with spray nozzles are placed throughout the plant as well as sand buckets and long-handled shovels. Regular firemen are on 24-hour call, but auxiliary firemen work on all three shifts and always are available.

Air raid wardens, who hold highly important posts, are stationed to be immediately accessible to the plant defense coordinator in event that any evacuation orders or special instructions are to be given to the employees. The primary duty of these men is to maintain a high state of morale among the production employees. It is they who prevent, panic and hysteria in an emergency. They must, therefore, of necessity be naturally calm and possess the initiative to cope with any emergency. They must have been trained in first aid and have learned how to dispose of incendiary bombs if the auxiliary fighting force cannot handle the situation.

When the Wyomissing Industries are warned of an impending air raid, trained roof watchers will man their lookouts on the roofs of various buildings from which they will be able to see all parts of the Industries. The roof watchers will extinguish any fire bombs they can, observe and report the location of all bomb hits to the plant defense coordinator. In event of serious damage, the plant coordinator will dispatch necessary special aid.

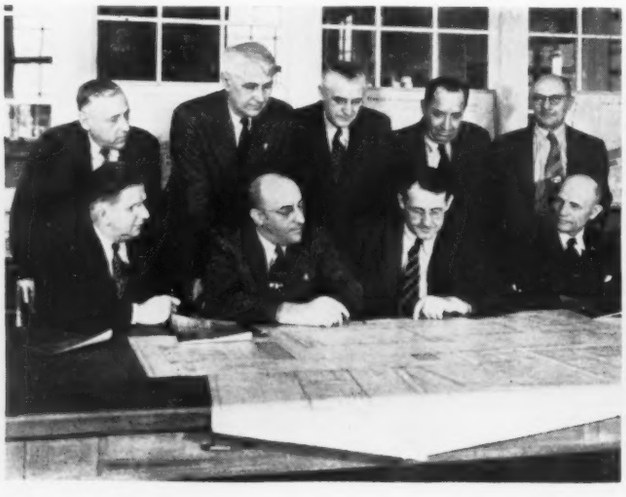
The roof watchers' positions are equipped wtih telephones, lights, and the necessary safety equipment, including gas masks. In the event of communication failure, one observer will act as messenger to communicate directly with the defense corps in his section. These men are being trained in a special course of instruction.

Auxiliary plant police act as an aid to regular plant police. Each auxiliary policeman or guard is an extra pair of eyes to watch for strangers. They must be doubly alert for sabotage and infiltration of unauthorized persons in the plant. We cannot relax our vigilance for a minute—it is vital to the prevention of sabotage.

To safeguard the health of Wyomissing Industries' employees in the event of an air raid, scores of employees are being trained in first-aid work by Red Cross instructors. The various first aid corps are assigned the responsibility of all first aid within their designated areas. If serious disaster is threatened, our dispensaries will be staffed with their full complements of doctors, nurses, and surgical assistants. Too much emphasis cannot be placed upon the importance of this training, since it is evident that more harm can be done by the incorrect administration of first aid than would result from total neglect.

Other preparations of the plant

One of two classes numbering 150 men and women who have completed a 20-hr. course in first aid. Employees so trained are capable of meeting all emergencies.



Wyomissing Industries defense committee; M. M. Hepler (seated second from right) coordinator of defense and his chief aides.

Auxiliary firemen get actual practice in extinguishing incendiary bombs under conditions that simulate actual war-time.

defense committee include the organization of important services, such as electrical and utility maintenance and construction and repair work. These groups are in charge of emergency repairs, illumination and communication control; maintaining and restoring water, gas, and steam services. Their duties also include rescue and demolition work necessitated by bombing with high explosives. They are on call at all times, but will report only in case of emergency.

Every precaution deemed necessary is being provided to make the Wyomissing Industries and its employees as safe as possible. It is pointed out, however, that an air raid warning is a warning, and not a promise. Also, it is emphasized to employees that they will be safer by obeying any instructions issued by the plant defense corps.

An article in a recent issue of the *Yarn Carrier*, a house organ published by the Wyomissing Industries for its employees, outlines the steps taken toward plant protection and ends with the following statement:

"While everything possible is being done to provide adequate plant defense, we have another and even greater task. That job, yours and mine, is to lend our dollars to Uncle Sam to provide greater national defense. We need ships, planes, tanks, guns, and munitions both for defense and offense. That's your job. Our goal is to have every employee—100%—as an investor in War Bonds. The Victory depend on *you*. Are you with us?"

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Plant Protection at West Point

TO INSURE UNINTERRUPTED PRODUCTION on Government orders, the West Point Mfg. Co. has mobilized its maximum resources in an intensive effort to safeguard the health of its employees, to stimulate morale, to promote increased efficiency, and to protect its plants and equipment against sabotage or any other untoward eventuality.

Through the enthusiastic cooperation of overseers and employees, these war measures are being put into effect in the various mills of the company with precision, thoroughness, and calmness. There is no semblance of war hysteria or excitement in any of the plants or in any of the villages. Just hard, conscientious effort and a dead-serious purpose to give everything to the war effort while on the job, then live normally and happily until the next shift begins, with every man and women physically fit and eager to do his or her part.

The solution of many of the problems that have arisen in making adjustments to the war-time schedule has been easily expedited by the fact that the manufacturing company for many years has laid the foundations for a wholesome and happy community life, with employees cooperating heartily in the fostering of schools, churches, health clinics, gymnasiums, clubs, playgrounds, parks, and a comprehensive recreation program. The new measures which have been adopted to meet emergency conditions, and others which have been expanded, are summarized below.

Chartered transportation companies have effected arrangements whereby employees from the main outlying, rural communities are transported to and from their jobs. Many employees who had bought small farms and built homes in the sections nearby the industrial villages would have found it a hardship, perhaps an impossibility, to get to their work but for this bus-transportation arrangement recently put into effect.

Guards have been increased, uniformed, armed, and instructed in their added responsibilities. Special colored badges, with employee, plant, and department identifications, are required of every individual connected with the manufacturing company. Every gate is closely guarded: employees enter in single file; trucks and truck drivers are rigidly inspected; all railroad cars are examined; records of entrances and exits are carefully entered; and the entire fenced-in area of every plant is floodlighted. No employee is permitted to enter without proper identification; and all visitors are required to present credentials, sign in and out, and wear a visitor's badge.

Fingerprinting is a regular part of the systematic and comprehensive employment routine of the personnel department. Since this work is done under order of the Army, the standard system is in effect. Persons trained to "print" the employees are showing intense interest in their assignments and are using technical terms with facility. Employees are cooperating in this feature with their customary spirit of "whatever is asked of us to help win the war, we are eager to do."

Fire-protection facilities and equipment have been augmented. Carrying out civilian defense instructions, the overseers have seen to it that buckets of sand and shovels are located in various strategic points throughout the plants from the front gates to the roofs—to be used if needed to fight incendiary bombs. Normally the

Employees pass through gate at change of shift.

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maintenance crews are organized to fight plant fires; and while they still have this duty, the men have been given additional civilian defense training for other types of fire-fighting work.

Employees have been trained as fire wardens, air-raid wardens, first aid workers, nurses, ambulance drivers, and in the other kinds of civilian defense duties. Each plant is set up with every overseer as a warden, who, in turn, has employees detailed for specific duties. Movies of air raids, the handling of fires from incendiaries, first aid, and other emergency activities have added to the interest and to the efficiency in being prepared for the worst should it come. One demonstration of fire-fighting was given by the local fire department for the observation of the defense workers, with an improvised building and actual incendiary bombs used for demonstration purposes.

Air raid drills have been held in the various plants, with every employee cooperating enthusiastically to make the tests realistic. In one weave room that was checked, all loom motors had been stopped and all employees were in their designated places of safety within 40 seconds after the signal was sounded. As yet no emptying of buildings during drills has been attempted.

The War Bond payroll deduction plan is in effect throughout the company and in each plant of the group, with more than 93% participating when the last report was made. In one plant 98.8% of the employees have signed up. Interest and competition are stimulated by a "thermometer" of department and plant ratings in percent of department employees.

Posters specially designed by the Safety and Personnel departments, together with others supplied by various governmental and private agencies, are placed regularly on the departmental and plant bulletin boards to point out to the employees the important parts they are playing in the war effort, and to encourage them to keep physically fit and to avoid accidents. The value of man hours saved through safety and health education, along with the patriotic appeals that are being continually made in all the plants, has noticeably increased with the rapid change in manpower to the Army.

New employees are given extra personal attention to assist them in their new work and to teach them safe and healthy practices. Women are especially important, since they are now in large numbers replacing men on jobs formerly held open for men; for example, doffing, sweeping, and weaving are absorbing a large number of women.

In each mill a well-equipped clinic and first aid room is provided.

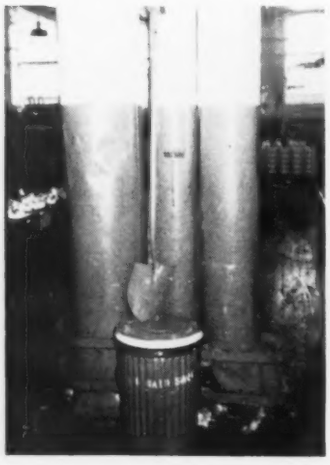
A graduate nurse and assistants keep in touch with absentees through daily reports and visits to the homes. Each new employee is given a thorough physical examination before he is put to work, and corrective measures or treatments—if necessary—are advised.

War Service Centers to maintain contacts between the homes and the men in the Service have been established in each mill town. These centers, patterned to render services similar to those during World War I, are particularly noteworthy. Commodious rooms are provided for reading and writing in conveniently located social-service buildings. All the activities are directed by a paid secretary at the mill's expense.

All men who haven entered the armed forces of the Nation are registered at the centers. When a man leaves the employment of the mill, he is given a letter from the mill superintendent to his commanding officer, stating that the soldier or sailor is entitled to a departure check of $20 that will be paid upon receiving a letter from the officer giving the service man's location.

Every two weeks the War Service Center secretary writes each man in the service a chatty two-page letter, giving general news of company and employee activities. In addition, the local newspapers are mailed regularly to each man. These services include all employees, white and colored, and also those from the villages who were never employed in the mills.

Parents and wives are able to get in touch with their sons or husbands through the cooperation of the secretaries. Individual attention is given to personal requests of the men in the service or to their relatives back home. Pictures of the service men are requested, and then displayed in the War Service Centers. After the war these photographs will be used for illustrating a War Service Manual which the manufacturing company plans to publish.



Equipment for extinguishing incendiary bombs at strategic locations.

Buses have been provided to transport workers to and from outlying communities.

A "thermometer" stimulates sale of War Bonds.

TEXTILE EQUIPMENT NEWS

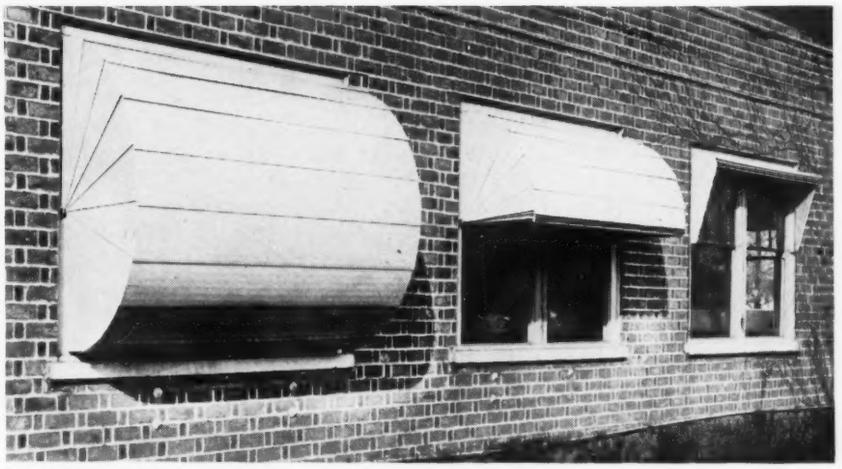
THIS DEPARTMENT this month features equipment for the various phases of plant protection which are analyzed in the special section beginning on page 83 of this issue. Manufacturers' publications on the subject are reviewed on page 125.

Metal Blackout Awning

To help solve the blackout problem in industrial buildings, Meta-Fold, metal, blackout awnings, have been introduced by Acklin Stamping Co., Toledo, Ohio. Constructed of metal and telescoping to conserve space, these metal awnings are installed on the exterior of the building and are operated like a roll top desk. For sunlight protection, the metal awning can be lowered halfway. For complete blackout, the awning is fully lowered.

To conserve space when the awning is raised, it has been designed in segments that nest together in a telescopic manner. Each segment is sealed from the other by a light-proof, noise-absorbent gasket. The entire awning is rust-proof and fire-proof, and can be provided with an inside lock.

This means of blackout control can be quickly operated, giving protection only when needed, and permitting prompt restoration of normal conditions as soon as the all-clear signal is heard. Furthermore, the metal covering for the windows affords protection to the glass against blast and flying splinters. Among other advantages that are claimed for this product are elimination of tell-tale reflection from the moon and other outside light at night; permanence of the installation, which requires no seasonal taking down and storing; eliminates a permanent blackout of windows; no restriction of daytime ventilation; and after-war value in sunlight protection and safeguarding against theft.

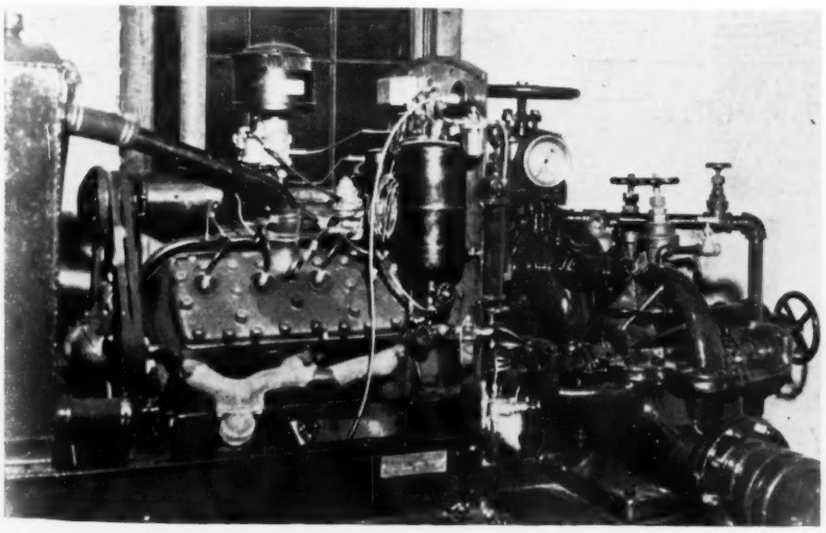


Blackout awning (Acklin Stamping).

Fire Pump Unit for Small Plants

A fire pumping unit recently developed by Fairbanks-Morse & Co., Chicago, is designed to afford small plants adequate fire protection at a moderate cost. Danger of incendiary bombs has been brought to mill owners, managers, and municipal officials alike, the importance of ever-ready pumping equipment in case of fire.

The new fire pumping unit, approved by the Underwriters' Laboratories, is composed of a 4-in. fire pump driven by a Ford-Mercury engine. The Mercury engine drive, turning at 2,500 r.p.m., is of sufficient speed to be direct connected, eliminating the expense of gear drive necessitated when a slow-speed engine is connected to a high-speed pump.



Engine-driven fire pump (Fairbanks-Morse).

Shatter-Resistant Coating for Glass

To prevent shattering of glass, Wilbur & Williams Co., Boston, has developed an easily applied, transparent coating material. This new material comes in liquid form, ready for use. It can be applied by spraying or brushing. The coating is said to pass sunlight with little absorption. It dries quickly, forming a strong, tough film, having a tensile strength of from 3,000 to 5,000 lb. per sq. in. Elongation is over 20%, permitting considerable movement of the glass without rupture of the film. Protection is given at temperatures up to 212° F. Only slight discoloration will be found after prolonged exposure. Although not intended for long service on the exterior, where exposed to weather, this shatter-resistant coating should be useful in any period of active bombing; and on the interior, should give protection for an indefinite period. It can be washed whenever necessary. Mills which require window-glass paint in normal

times for glare-reduction, can obtain a colored coating which combines glare-reduction with resistance to shattering.

Drum Opener

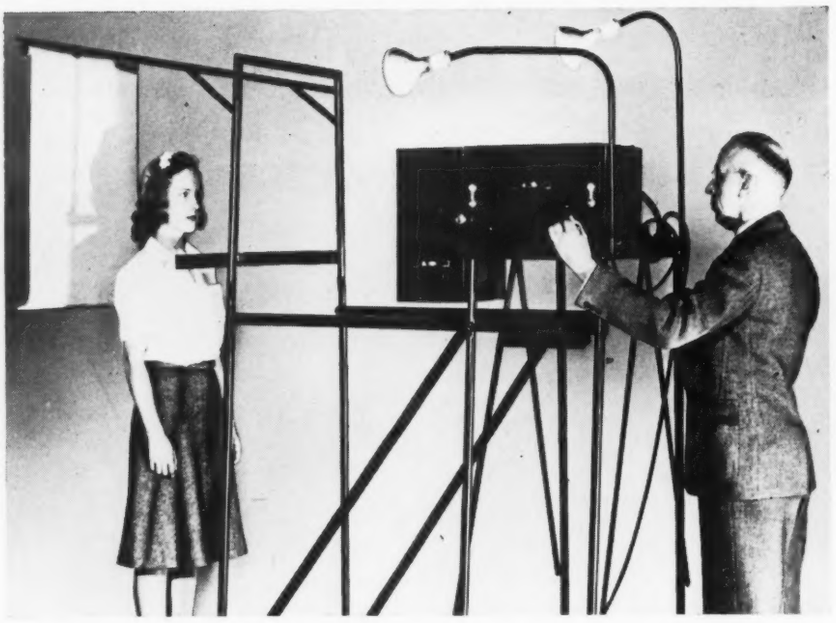
Opening of metal drums by a new device developed by Turner & Seymour Mfg. Corp., Torrington, Conn., permits quick and efficient opening. The opener cuts and holds back a thin edge, opening about the side of the drums, thus eliminating the use of a cold chisel and hammer. Also, all sharp edges are eliminated by folding back a smooth edge, permitting the drums to be used again for other purposes.

Defense Plant Identification Photos

A speedy method of preparing identification badges, and at the same time recording pertinent information in file pictures, has been made possible by photographic equipment manufactured by Marks & Fuller, Inc., Rochester, N. Y. Three models are available.

Marful Portable is a small, portable photographic unit constructed of steel tubing. This unit requires 20 min. to assemble and may be moved from one mill to another. Pictures 1½ x 2 in. are taken on a 250-ft. roll of special direct positive paper which makes 2,000 pictures.

Two other models are available, each a self-contained unit which incorporates a speed-equipped darkroom and camera mechanism that permits the complete identification badge, including photograph, to be made in an elapsed time of 5 min. The Senior model permits the production of identification passes that show a photograph of the operative, his height, age, and other data.



Photographic identification equipment (Marks & Fuller).

SPLINTER-RESISTANT TREATMENT

General Radio Co.

ROXANEAL, a new product for preventing broken glass from flying, has been announced by Roxalin Flexible Finishes, Inc., Elizabeth, N. J. This new glass protector is a water-white, transparent liquid. It is not intended to stop glass from fracturing, but tests with a 37-mm. anticraft shell dropped on a Roxaneal coated glass are said to have proved that it will keep broken glass in place, thus preventing dangerous glass splinters from flying.

Anti-Sabotage Case For Fire Extinguisher

Sabotaging of fire extinguishers is prevented when extinguishers are housed in a Tam-Pruf box, manufactured by Erie Supply & Equipment Co., Sandusky, Ohio. An all-metal box, locked with a padlock, houses the fire extinguisher. In an emergency, a panel, or breaker arm, is pressed which breaks the lock seal and the door springs open, revealing the extinguisher ready for use. A glass window in the side of the box permits routine inspection of fire fighting equipment without breaking the seal. Advanatges stated are that the extinguisher is protected from weather, atmospheric conditions, etc. The tamper-proof case prevents unauthorized persons from emptying the contents of the extinguisher and cutting or otherwise damaging it in an attempt to render it useless.

Bomb Shovel

A new bomb shovel, developed by two employees of the Los Angeles Shipbuilding & Drydock Co. for fighting incendiary bombs, has been recently announced by Industrial Maintenance Engineering Co., Ltd., 724 South Spring St., Los Angeles, Cal. The shovel carries a load of sand in the handle to smother the blazing incendiary. Made of galvanized sheet metal and weighing only 17 lb. when loaded, it may be handled by untrained employees and can be carried to the roof of a building. User is always 4 to 5 ft. from the burning bomb. Sand is automatically released from the handle after the operator has used the hollow side of the shovel to control the blazing bomb. Raising the shovel slightly causes the sand in the handle to pour out and completely smother the incendiary. The shovel is then turned over to scoop up the blazing missile and remove it to a safe place. The shovel is effective also in smothering oil or gasoline fires.

Acoustical Sentry System

Plant protection against saboteurs and all persons trying to gain access to a plant is facilitated by the use of a new acoustical sentry system manufactured by Automatic Alarms, Inc., Youngstown, Ohio. The system, originally developed by E. I. du Pont de Nemours & Co., consists of a device that relays to a central guard station all sound about

the fence circling the property. The device is said to be so sensitive that it is possible to detect a whisper or the snip of a wire-cutter. These sounds can be amplified through a loudspeaker or they may be recorded on a tape or drum to indicate the exact hour. It is also possible to have it so arranged as to ring a bell or some other automatic signalling device at any location.

Luminaires for Lighting Fences

Lighting fences about mills for protection against sabotage requires specially designed lights, such as Luminaires developed by Westinghouse Electric & Mfg. Corp., East Pittsburgh, Pa. These lighting units can be mounted on poles and building walls and consist basically of a hood with socket and receptacle, mounting bracket, a reflector and lens assembly. Moisture-proof felt gaskets form a weatherproof and bug-proof seal between the hood and the reflector. A luminaire using a Fresnel lens, throws a flat, fan-shaped beam of light. When set several feet away from the buildings, it may be aimed so that its light is projected slightly downward away from the building. The space between the luminaire and the building is virtually in darkness so as to provide lighting in reverse. Intruders would be blinded by the light while the guards see the intruders plainly.

Air Raid Sand Truck

Adequate supply of sand and the necessary fire fighting tools are assured with a mobile sand barrel developed by Specialties Mfg. Co., Inc., Bloomfield, N. J. A 2½-cu.ft. barrel is mounted on wooden wheels so it may be pushed about the mill to wherever it is needed. Two handles permit the barrel to be carried up or down stairs. Brackets for holding a long-handled shovel, axe, and other tools with which to fight fire are attached to the barrel.

A mobile pump barrel is also manufactured by this company as a companion product. With a capacity of 20 gal. of water, a stirrup type of pump, and a 12-ft. length of hose with a nozzle, this unit may be held in readiness to meet all emergencies. Both of these pieces of air raid protective equipment are painted yellow for visibility, especially at night.

Air raid sand truck (Specialties Mfg.).

Fighting Magnesium Bomb Fires

Powder contained in a 5-ft., 10-lb. tube called Bomb-Quench has been developed by O. H. Adams Co., Milwaukee, Wis., for fighting magnesium fires. The person extinguishing the fire stands a safe 5 ft. from the blaze, quickly removes the top from the tube of Bomb-Quench, and sprinkles the extinguisher powder over the blazing fire. As the powder quickly softens in the heat, it flows over the burning mass, clings to it and forms a completely airtight cover that is said to stop combustion quickly and to create an extinguishing chemical vapor within the insulated crust formed over the mass of burning molten metal. Although it forms a solid supporting crust which can be readily removed from the surface on which it is formed, it is still soft enough to be broken up if desired.

Simulated incendiary bombs weighing more than the ordinary bomb were satisfactorily extinguished within 42 and 65 sec., respectively, according to chemical laboratory reports.

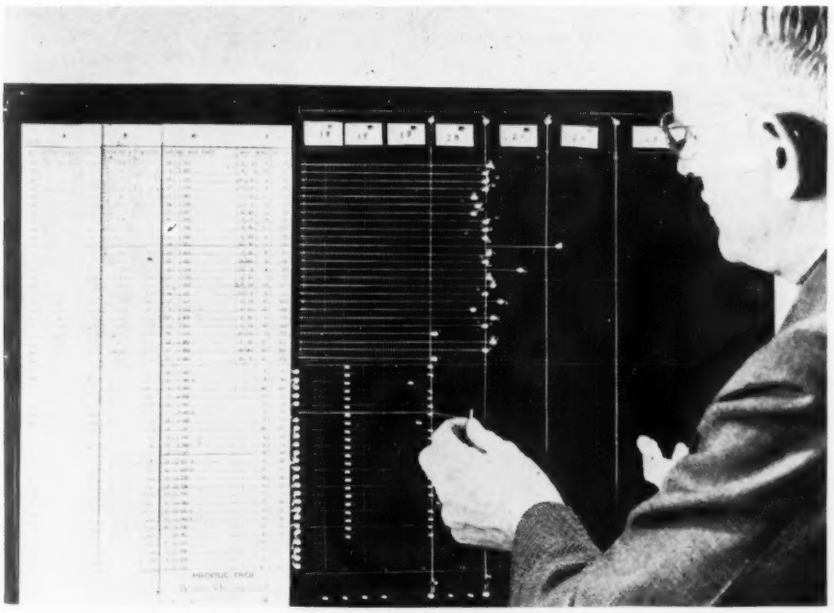
Black-out Ventilators

Blackout ventilators have been developed by Trane Co., LaCrosse, Wis., that permit proper ventilation in mills that have been blacked out. Three models are available: one for summer which is capable of handling large volumes of outside air with perceptible air motion; an exhaust unit that permits large quantities of air to be exhausted from mills; and a third unit, intended for winter, having heating coils and by-pass dampers to permit controlled heating.

Air Raid Siren

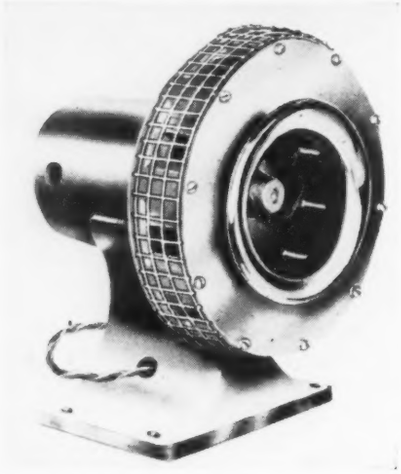
Air-raid warning to employees in mills, industrial plants, warehouses, office buildings, etc., is provided by a new type Air-Raid Siren developed for industrial use by Breuer Electric Mfg. Co., Chicago. It is stated that civilian

PRODUCTION-CONTROL BOARD



PRODUCTION CONTROL may be scheduled and checked with Produc-Trol, a control board developed by Wassell Organization, Westport, Conn. Produc-Trol can serve a two-fold purpose in comparing originally scheduled man-hours with actual production per man hour. The chart has tapes which work on pulleys so they may be drawn out with a peg to hold them in position. Two lines of peg holes for each tape provide means of comparing schedules by colored pegs, in addition to the white tape.

defense alarm systems are not adequate, as they are sometimes cannot be heard inside a textile plant, especially in weave sheds, spinning rooms, etc., above the din of operating machinery. With these requirements in mind, two models were developed—one for small departments, laboratories, offices, etc.; and a larger model for weave sheds, card rooms, spinning rooms, and other departments of high noise level. These sirens are equipped with universal motors for either alternating or direct current. They operate from any ordinary light current, and are equipped with base for either vertical or horizontal mounting.



Air raid siren (Breuer Electric).

Folding Stretcher

A folding stretcher outfit has been developed by Mine Safety Appliances Co., Pittsburgh, Pa., for emergency use. The folding stretcher when opened corresponds to a full size army type. The frame consists of wood and is covered with 12-oz. duck. An all-weather, dustproof steel case 53 in. long holds the folding stretcher, a wool and a rubber blanket, four wood splints, and two chemical hot pads and a first-aid kit.

Low-Visibility Paint

Low visibility paint possessing good heat and deflecting qualities has been developed by Arco Co., Cleveland, Ohio. The paint is recommended for water towers of mills, for buildings and for tanks that contain fuel and other volatile materials. The new paint meets Navy specifications for infra-red reflecting paints for use on fuel storage tanks. Seven shades are available. It is stated that this paint has heat deflection qualities comparable to that of aluminum paint.

Courtesy United States Rubber Co.

Safety Shoe (Sperry).

Safety Shoes

Safety shoes have been developed for those who must work under conditions where the floors are wet and accidents from slipping are prevalent. These shoes, developed by Sperry Shoe Co., Beacon Falls, Conn., consist of 3,700 individual rubber tentacles which have great gripping power on wet floors. It is possible to obtain these shoes with a safety toe cap to prevent the wearer from injury caused by dropping heavy objects on his foot.

Blackout Signs

Blackout signs which are legible in the dark without the use of light that might be visible from an airplane, have been developed recently by Formica Insulation Co., Cincinnati, Ohio. The signs consist of laminated plastic plates printed in phosphorescent and fluorescent inks, both of which glow brightly in the absence of visible light. The inks are protected by plastic film to prevent the lettering from becoming injured by grease or cleaning solutions. The phosphorescent type is activated by ordinary white visible light and will remain legible for 2 hr. after the light is turned off. The fluorescent type is activated by ultra violet or "black", invisible light and remains legible as long as ultra violet light is thrown upon it. Such blackout signs are extremely useful in guiding employees to air raid shelters.

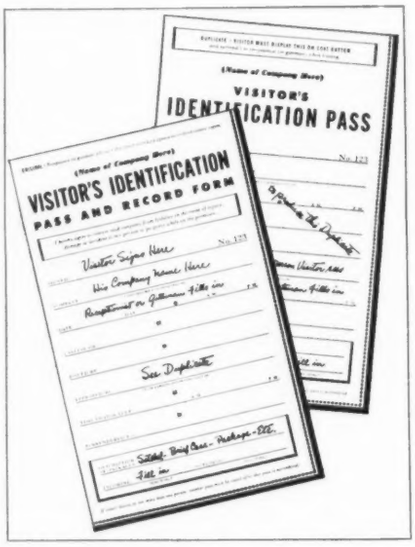
Blackout signs (Formica Insulation).

Camouflage Paints

For painting industrial buildings, water tanks, and similar structures to make them less visible to the eye or the camera, Truscon Laboratories, Inc., Detroit, Mich., has developed a series of Truscon Camouflage Coatings, based on U. S. Army specifications to fulfill these purposes in the visual deception of industrial plants and areas. All of these paints—nine colors plus black and white are available—are dead flat and do not show a mirror-like reflection, even when viewed at sharp angles.

Visitor's Identification Form

A suggested form of pass which permits a permament record of visitors in a mill is offered by Munising Paper Co., Chicago. The form is filled by the gateman in duplicate—one being for the company files and the other to be worn by the visitor. Such pertinent information as name, company represented, person to be seen, etc., must be recorded on the form. Also, the time the visitor arrived and the time left must be marked.



Visitor's identification pass (Munising Paper).

Photoelectric Control for Plant Alarm

Photoelectric control for the purpose of providing a warning signal inside mills in the event of an air raid has been developed by Photoswitch Inc., Cambridge, Mass. Tests in mills have shown that in many instances, because of the din of machinery, etc., it is impossible

BIG GUNS AT SONOCO

— in Action

In the factories of the world's largest producer of textile paper carriers, a 24-hour daily schedule of seven days a week, has been in effect for many months.

As in 1917, Sonoco has gone all-out on production of those essential war products they are qualified to make.

Fortunately, through careful advance planning, our production of war material does not interfere with the essential supply of paper carriers for textiles, upon which a large part of the industry depends.

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

to hear external air raid warning sirens. The Photoswitch control is placed in a convenient location so that it is aimed at a centrally controlled street lamp. Through the photoswitch are connected alarm systems operating inside the mill and when the street lights are turned out, the photoelectric control operates and the alarm is sounded. The control is designed to operate independently of a momentary flickering of the street lamp, also independently of ambient light conditions.

Spray Nozzles

Spraying nozzles that eliminate a solid stream have been developed by American-LaFrance-Foamite Corp., Elmira, N. Y. It is intended that only a fine spray of water emanate from these nozzles such as is of assistance in extinguishing heavy oil fires and for use in cooling buildings, tanks, and other structures. It is possible to regulate the cone spray from 40 to 150° or reverse back to shut-off without the production of a straight stream of water.

Finger Guards

Finger guards for loomfixers and mill maintenance men that consist of protection for the thumb and first two fingers have been developed by Industrial Gloves Co., Danville, Ill. The guard takes the form of a glove made of wool felt—material best suited for handling greasy or oily parts. The guard may be had also in chrome leather. The back part of the glove is made of elastic webbing so as to assure comfort to the wearer.

Protective Coating

Transparent protective coating, called Glasshield, to prevent the flying of shattered pieces of glass broken by vibration during air raids, has been developed by Maas & Waldstein Co., Newark, N. J. It is stated this coating may be applied with a brush. An hour is required for the first coat to dry before the second may be applied. The coating does not interfere with vision or light transmission, it is stated, and it may be readily removed with a razor blade whenever desired.

Pump for Extinguishing Incendiary Bomb Fires

For extinguishing fires caused by incendiary bombs, Zadig Patents, South Norwalk, Conn., has introduced a new pump which is constructed without use of strategic materials. The pump is made entirely of wood and fabric. All need for rubber has been eliminated, and the two lengths of hose used also are of fabric. In its design, the new pump has been simplified to the barest essentials in the interest of immediate large-scale production. The operator stands on the base of the small pump, thereby obtaining great leverage and consequent high pressure with minimum effort. An upright handle is rocked back and forth to suck water out of a pail and produce a strong stream from the nozzle.

Blast-Cushioning Material

Blast-cushioning for blacking out industrial buildings has been developed by Owens-Corning Fiberglas Corp., Toledo, Ohio. The material, known as Fiberglas OC-9 Board, can be used as a permanent or semi-permanent window covering and as an interior facing for exterior walls. The new material is composed of fine, resilient glass fibers compressed and treated with a binder which gives it sufficient rigidity to serve as a self-supporting fire-resistant material. If desired, the material may be faced with glass fiber cloth, plywood, or other surfacing materials.

Protective Devices Previously Described

FLOOR-PATCH for repairing holes, ruts, worn places, etc., in concrete floors; Truscon Laboratories, Detroit, Mich. (Sept. '41)

TOGGLE-TYPE BEARING DUMPING HARNESSES; Lewis-Shepard Sales Corp., Watertown, Mass. (Oct. '41)

SANITARY TOILET SEAT; Sperzel Sanitary Seat Co., Minneapolis (Dec. '41)

BLACK-OUT PAINT for windows, skylights, etc.; American Marietta Co., 42 East Ohio St., Chicago (Jan. '42)

FINGER GUARD; Industrial Glove Co., Danville, Ill. (Jan. '42)

BLACK-OUT COATING for windows, skylights, etc.; Carbozite Corp., Pittsbugh, Pa. (Feb. '42)

CAMOUFLAGE PAINTS for spreadings over roofs, buildings, etc.; Sherwin-Williams Co., Cleveland (Feb. '42)

BLACK-OUT BULBS conforming to O.C.D. recommendations; Wabash Appliance Corp., Brooklyn (May, '42)

LIGHT-PROOF VENTILATOR for use in blackouts; De Bothezat Ventilating Equipment Div., American Machine & Metals, East Moline, Ill. (June '42)

DRUM CARRIER for placing and removing drums on and off skids, scales, and platforms; Ernest Magic Carrier Sales Co., Buffalo, N. Y. (June '42)

New Dyes and Chemicals

Salt Tablets

One of the most baffling causes of disability among employees has been heat sickness or heat cramps, particularly prevalent among workers engaged in hot, heavy work. Research has shown that loss of salt from the body, through excessive sweating, is at the bottom of the trouble. In a recent release, Morton Salt Co., Salt Tablet Division, 310 S. Michigan Ave., Chicago, states that salt lost through sweating or other bodily functions should be replaced at the same time and in the same ratio as the loss.

Although various methods are employed to supply salt to workers, use of salt tablets and tablet dispensing machines, placed near drinking fountains or on portable water coolers, has become increasingly popular. The tablets contain regular table salt, compressed under pressure to a uniform 10-grain size. They are swallowed whole with a drink of water. Workers engaged in light to medium work will require from 4 to 6 tablets daily; workers in medium heavy work from 8 to 10 tablets; and workers in extra heavy, hot work from 12 to 15 tablets. Salt tablets can also be obtained with 70% salt and 30% dextrose for extra energy.

Delustering and Softening Agent

Development of a combined delustering and softening agent for synthetic fibers has been announced by Ciba Co., Inc., Greenwich & Morton Sts., New York. This new product, known as Radul, permits delustering and softening of piece goods and hosiery to be carried out in one operation. Radul is said to have excellent dispersion and exhausting properties.

Dyes for Acetate Rayon

A line of acetate rayon dyes which are not derived from anthraquinone has been announced by Bernard Color & Chemical Corp., 333 Hudson St., New York. The dyes available make it possible to produce a wide range of shades, including blues, greens, and violets.

Forward March!

Objective sighted . . . and cupid is the Officer of the Day. • For soldiers in khaki or girls in sweaters, Dixie yarns perform many services. A lustrous yarn for attractive appearance . . . a resilient yarn for comfort . . . a strong yarn for long wear. Underwear, shoulder insignia, braided cordage, wind resistant fabrics for active and efficient soldiers and sailors . . . sweaters, sox, undergarments for lovely young ladies. • Whether marching to war or peace, knitters march forward with Dixie durene.

Dixie MERCERIZING CO., Chattanooga, Tenn.

Dixie Durene . . . A Product of Controlled Agriculture

AMERICAN COTTON MADE IN U·S·A

New Publications

Protection Against Air Attacks

HOW TO FIGHT FIRES RESULTING FROM AIR ATTACKS; National Foremen's Institute, Inc., Deep River, Conn.; $3.75 per hundred; $30 per thousand.

Leaflet prepared by National Foremen's Institute describes clearly and concisely methods for fighting fires due to incendiary bombs. Undoubtedly many textile mill men will be interested in obtaining a sufficient number of the leaflets to permit distribution of a copy to each employee.

Plant Efficiency Booklet

A booklet called "Plant Efficiency—Ideas and Suggestions on Increasing Efficiency in Smaller Plants" has been published by the Division of Information, War Production Board, and is now available for distribution, on request. It is in simple terms and is designed primarily for smaller war plants or for plants which are just getting into war production and which might be able to increase production by a study of efficiency procedures.

Copies may be obtained from regional and local offices of the War Production Board, located in 120 cities; from local offices of the Division of Information, Office for Emergency Management; or by writing to the Division of Information, Office for Emergency Management, in Washington.

Recent Plant-Protection Literature

Publications relating to plant protection, safety, improvement of morale reviewed in recent issues of TEXTILE WORLD follow:

FATIGUE OF WORKERS; National Research Council, Reinhold Publishing Co., New York; $2.50 (Nov. '42).

EYE HAZARDS IN INDUSTRY; Louis Resnick; Columbia University Press, New York; $3.50 (Jan. '42).

FOREMANSHIP FUNDAMENTALS; A. L. Kress; McGraw-Hill Book Co., Inc., New York; $2.50 (Mar. '42).

FUNDAMENTALS OF INDUSTRIAL PSYCHOLOGY; Albert Walton; McGraw-Hill Book Co., Inc., New York; $2 (Mar. '42).

HOW TO PREPARE A FOREMAN'S POLICY MANUAL; R. C. Oberdahn; National Foremen's Institute, Deep River, Conn.; $6.50 (Apr. '42).

HOW TO CREATE JOB ENTHUSIASM; Carl Heyel; McGraw-Hill Book Co., Inc., New York; $2 (May '42).

SABOTAGE—HOW TO GUARD AGAINST IT; Harry Desmond Farren; National Foremen's Institute, Deep River, Conn.; $1 (Apr. '41).

HOW TO SUPERVISE PEOPLE; Alfred M. Cooper; McGraw-Hill Book Co., Inc., New York; $1.75 (July '41).

HOW TO MAKE A MORALE SURVEY; Eugene J. Benge; National Foremen's Institute, Deep River, Conn.; $7.50 (Jan. '42).

SUGGESTIONS FOR PROTECTION OF INDUSTRIAL FACILITIES; Federal Bureau of Investigation, U. S. Department of Justice, Washington, D. C. (Apr. '41).

News of Suppliers

E. F. Houghton & Co., Philadelphia, have moved their New York office from 480 Canal St. to 421 Seventh Ave. However purchase orders should be mailed direct to the Philadelphia main office, at 303 West Lehigh Avenue.

Quaker Chemical Products Corp., Conshohocken, Pa., has established new and larger warehouse and blending plant facilities at 9243 Baltimore Ave., Chicago. R. L. Phillips is plant manager. Members of the local technical service staff are K. B. Copeland and C. O. Judd.

Stein, Hall & Co., New York, and **Stein, Hall Mfg. Co.,** Chicago, report the retirement of Louis E. Leverone as general manager of the Chicago company. Mr. Leverone, who has been associated with the company for 30 years, will continue as a vice-president, but at his request retires from the position of general manager in order to devote most of his time to his many civic and other duties. D. M. Hawley, who was appointed production director for all Stein-Hall affiliated companies some time ago, has been elected general manager and vice-president of the Chicago company, with Walter H. Hart as assistant general manager. Mr. Hart is also secretary of the Chicago company. Edward Butts, Jr., sales manager for the New York company, is now general sales manager for both the Chicago and New York companies.

Morton Chemical Co., Greensboro, N. C., has entered on a enlargement program which will more than double the size of its present plant and increase its laboratory space by more than 400%. New equipment has already arrived. Joseph R. Morton is president; W. H. McCormick, Jr., secretary; S. V. Valjavec, chief chemist.

R. D. HOWERTON, who has been appointed manager of the Chicago office of Calco Chemical Division, American Cyanamid Co. He started his business career in the textile plant of Stonecutter Mills, Spindale, N. C. and has since been continuously identified with the dyestuff and textile equipment fields.

National Oil Products Co., Harrison, N. J., has appointed E. J. Barth, petroleum technologist, of Three Rivers, Tex., to its research and development staff.

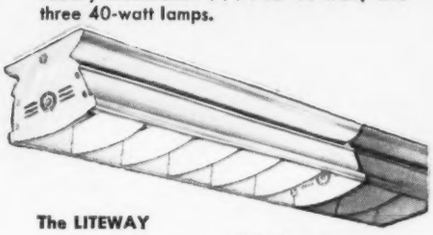
Carrier Corp., Syracuse, N. Y., has elected Cloud Wampler, previously executive vice-president of the company to be its president, succeeding the late J. Irvine Lyle. Edward T. Murphy, senior vice-president, was elected a member of the board of directors to succeed Mr. Lyle.

Fitchburg (Mass.) **Spinners Sales Corp.** has been formed as merchandising agent for three Fitchburg mills: Fitchburg Yarn Co., Watatic Spinning Mills, and Wachusett Spinning Mills, all producers of fine cotton yarns. The headquarters are located in Fitchburg, with representatives in New York, Boston, Chicago, Philadelphia, and Reading, Pa. Services of a technical staff are available.

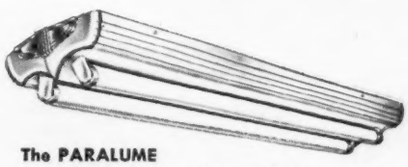
Union Special Machine Co., Chicago, has a large part of its equipment on war work. In line with the WPB program for the direct application of normal peace-time productive equipment to the manufacture of war equipment, it is significant that during one three-week period recently Union Special added almost 100 war items to those already being produced without

DAY-BRITE FLUORESCENT FIXTURES MAKE EVERY "*LIGHT MINUTE*" EFFECTIVE

The TWO-FORTY . . . THREE-FORTY
Industrial fixtures designed for highly-effective factory illumination . . . Two 40-watt, and three 40-watt lamps.



The LITEWAY
A louver type exposed troffer for direct ceiling mounting in single units or long continuous runs. Single or multiple lamp.



The PARALUME
A very popular Day-Brite Unit for general lighting — furnished for 2, 3 or 4 lights. Direct ceiling or suspension mounting.

***The* DAY-LINE**
For continuous installations — Porcelain enamel reflectors — Designed for easy installation and servicing. 2 or 3 — 40 watt; 2 — 100 watt lamps.

DAY-BRITE RLM

60 "LIGHT MINUTES" IN EVERY PRODUCTION HOUR

DAY-BRITE Fluorescent Fixtures utilize every light minute of every production hour. A flood of glare-free illumination is secured and maintained by: Correct spacing of tubes — Maintenance of cut-off angles that govern light distribution — Ease of installation — Ease of servicing — Mechanical accessibility — Provision for unit mounting or continuous runs . . .

Call your nearest Day-Brite Engineering representative — he will convincingly show you how Day-Brite Fluorescent Fixtures put 60 "light-minutes" into every hour of your production time. It's important to you — and to Victory!

DAY-BRITE LIGHTING, INC.
5497 BULWER AVE. • • • ST. LOUIS, MO.

DayBrite Rivals Daylight — Adds Victory Hours!

Designs Patented Nos. 130,740, 2,281,346, 122,156, 125,001

Day Brite Reg. U. S. Pat. Off.
FLUORESCENT FIXTURES

51

The COMPLETE LINE OF FLUORESCENT LIGHTING FIXTURES *Nationally distributed through all leading electrical supply houses*

War Work Set to Music

TO RELIEVE nervous fatigue and boost morale, war work has been set to music at the Westinghouse Lamp Division, Bloomfield, N. J.

Loudspeakers stationed in main manufacturing areas now play marches, tangos and swing for five and a half hours a day while hundreds of the plant's men and women employes turn out vital communications equipment for the nation's armed forces, according to A. E. Snyder, assistant general manager. Recorded music is also played in the company's recreation rooms and cafeteria.

the purchase or installation of any additional equipment. Within a comparatively short time the company will be producing several hundred such items on the same equipment that is used to produce sewing machines.

Textile Machine Works, Reading, Pa., suspended the manufacture of full-fashioned knitting machines for the duration on June 20 when the last of these machines, No. 13,430, was shipped. The company's facilities are now operating entirely on war work, but maintaining replacement of parts and otherwise servicing their machines in the industry will be continued. The first knitting machine built by the firm in 1902 was a 12-section 30-gage outfit; the latest was a 30-section 51-gage machine.

Columbia Chemical Division, Pittsburgh (Pa.) Plate Glass Co., has named Alfonse Pechukas as acting director of research, succeeding Dr. Irving E. Muskat, resigned.

Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., for the second consecutive year, has won a national award for its advertising campaign. The National Advertising Agency Network has chosen the campaign entered in the Best Business Paper Campaign competition by Manhattan as the best in its class. Conservation of rubber and rubber goods was the keynote. Fifty-one industrial publications, including a number of consolidated catalogs, were used.

National Starch Products, Inc., New York, has elected Alfred A. Halden as vice-president in charge of manufacturing, and Peter G. Evans as assistant secretary.

National Industrial Advertisers Association held its War Conference at Atlantic City, N. J., from June 29 to July 1. This conference took the place of the annual conference and exposition previously scheduled for September.

Chapman Electric Neutralizer Co., Portland, Maine, began serving the trade directly from its home office at Portland, on June 1. It will employ the Chapman Neutralizer installation engineers from the Kidder Press Co., Dover, N. H., which formerly served as agent but which has retired from the agency business. Merle S. Pennell, sales engineer, has reassumed his responsibilities with the company.

B. F. Goodrich Co., Akron, Ohio, reports that V. I. Montenyohl, vice-president of the company, and a member of the organization for the last

WILLIAM C. JOHNSON, lately sales manager of the crushing and cement division, who has been named manager of the Allis-Chalmers Mfg. Co's general sales organization. Until his election as president, Walter Geist directed the general sales organization. Mr. Johnson will direct the sales of 1,600 different products and the operations of 60 district offices. He has been with the company since 1924.

35 years, has resigned because of his health. Mr. Montenyohl in recent years has been responsible for activities of the Koroseal, Chemical Sales and Traffic Divisions of the company and was president of The Philadelphia Rubber Works. L. H. "Larry" Chenoweth, manager of manufacturers' sales, in the Industrial Products Sales Division of The B. F. Goodrich has been granted a leave of absence to serve on the Rubber Products Division of WPB.

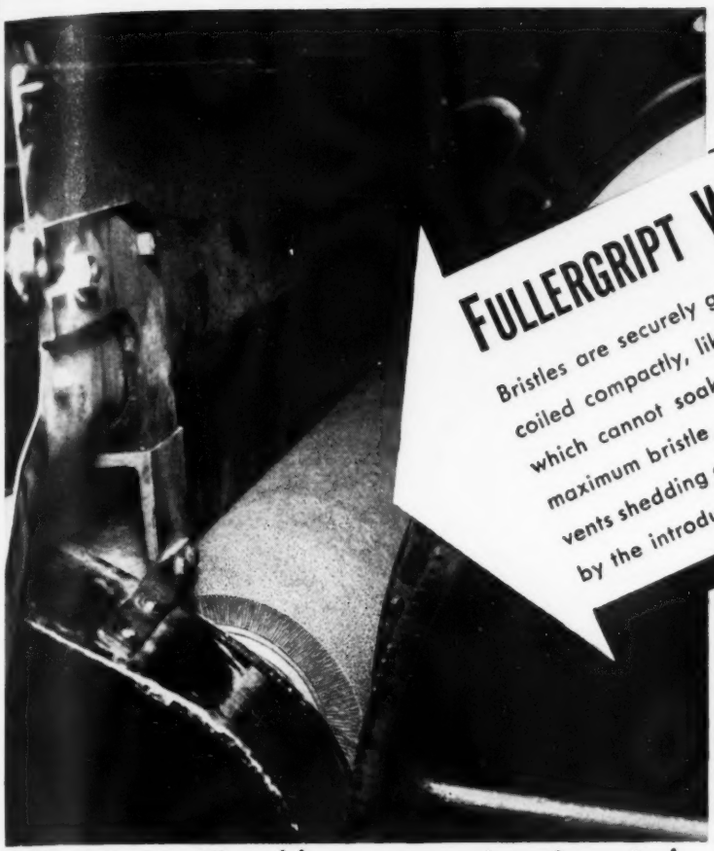
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., demonstrated last month to editors of business and technical magazines more than a score of new engineering developments and new ideas that can be put to work to help speed production in almost any war industry. Dr. A. A. Bates, who directs chemical and metallurgical work at the Westinghouse research laboratories, where many of the technical advances were discovered, stated: "We believe this demonstration illustrates the willingness of many big companies to share their specialized 'know how' with all American industry during this national emergency." The demonstration was held in the Hotel Astor, New York.

York (Pa.) **Ice Machinery Corp.** has opened a New York branch office at 100 East 42nd St. Alfred Christensen, formerly sales manager of the York Brooklyn branch, has been named branch manager. This office will replace facilities formerly in Brooklyn.

General Electric Co., Schenectady, N. Y., reports that more than 5,000 of its employees from plants throughout the country are now serving in the armed forces.

AT ONYX OIL & CHEMICAL CO.'S MONTHLY MEETING

Miss Irene Blunt (at center of group), secretary of National Federation of Textiles, was guest of honor at the meeting of Onyx executives and departmental staffs in Jersey City last month. Also in the group are representatives of textile publications and the following Onyx executives: Victor Berman, president; Dr. Hugh H. Moser; Leon P. Brick; and Messrs. Kaplin, Purdy, Von Ossen, and Stuart. Miss Blunt sketched the development of Nylon in war activities and gave a quick picture of the work of the Federation especially in the arbitration of disputes.



FULLERGRIPT WORSTED-CARD BRUSHES

Bristles are securely gript in rust resisting metal. This strip is then coiled compactly, like fillet card clothing, around a metal core, which cannot soak up oil, crack or split. This construction gives maximum bristle density, longest life and lowest cost; it also prevents shedding of bristles and the consequent ruining of good stock by the introduction of highly objectionable "foreign matter."

Again Fullergript Textile Brushes do a Better Job at Lower cost!

Here is a new success story — to add to the ones on Fullergript cotton-card brushes, Fullergript thread-dresser brushes, Fullergript dabbing brushes and other Fullergript textile brushes.

FULLERGRIPT WORSTED-CARD BRUSHES

contribute to this impressive demonstration. Its tightly packed bristles push the wool — all the wool — down into the pins of the Morel clothing, leaving the burrs on top of the pins, free of fiber, ready for easy removal.

Fullergript brushes are proving helpful in three ways on worsted cards — as feed-roll brushes to start the wool properly in the teeth of the first lickerin, as Morel brushes to disentangle the burrs from the wool, and as Morel transfer brushes to carry the wool to the Morel roll and disentangle the burrs at the same time.

In all these applications the great density of the Fullergript bristles insures that the wool will be pushed into the clothing — not back into the brush! This means the brushes will not clog up rapidly, lose their efficiency and require cleaning — always a difficult, time-consuming job.

YES, its a new success story. Do you want to hear the others — on cotton-card brushes, for example? If so, write us and we'll gladly relate them to you.

Do You Want To Remove Burrs?

Look at the quantities pouring out of this worsted-card in a prominent New England combing plant.

FULLERGRIPT — *better work at lower cost*

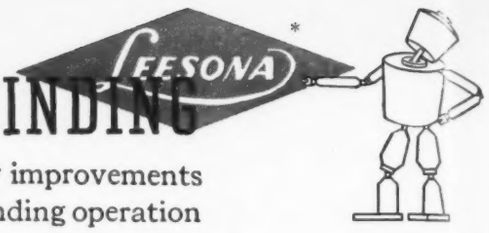
The FULLER BRUSH Company

INDUSTRIAL DIVISION, DEPT. 8C

3594 MAIN STREET - - - HARTFORD, CONN.

THIS IS NO. 34 OF A SERIES ON

GETTING THE MOST FROM WINDING

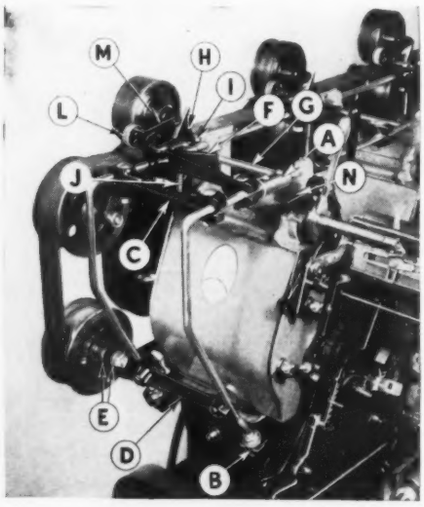


Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

BELT AND END IDLER PULLEY ALIGNMENT (No. 50 Winder)

When No. 50 Winders are installed properly, it is possible to run the same endless belt for a period of years with a minimum of maintenance. During a recent call on a plant operating many No. 50 Machines, the following points about pulley alignment were brought out that will be helpful to other mills in increasing belt life due to proper alignment of end idler pulleys.

The two main tie rods connecting the frames are used to line and level the machine, but the end sections to which the End Idler Pulleys are fastened, are lined up separately. The method of doing this is as follows:



No. 50 Belt Drive with Gear Gain

(1) Attach the end sections of the tie rods to the main sections by means of the Couplings (A).

(2) After tightening the two Couplings, push the lower end of the rods *as far as possible* into the slots (B) in the bed; with the fingers, adjust the nuts to the approximate position. A level across the end tie rods will help get a better setting before tightening the nuts at B.

(3) Mount the Top End Idler Pulley Bracket (C). Tighten, first, the end near the pulley; the slot at that end is a finished surface and should locate properly the other end of the Bracket. Then tighten the far end.

(4) Mount the Lower End Idler Pulley Bracket (D). This, too, has a finished slot at the end near the pulley, so that should be tightened first. This Bracket is also equipped with washers (E); by adjusting these washers, the pulley can be brought into line with the Top End Idler Pulley.

(5) Now install the belt and start the motor to see if the belt runs around the end pulleys without touching the flanges. It may be necessary to perform any of the following adjustments to make the belt run true:

a. If the belt rubs against either flange of the upper pulley, move the outer end of the Pulley Bracket slightly along the tie rod. This can be done by slightly loosening both nuts and tapping the outer end of the Bracket to improve the alignment; then tighten the outer end of the Bracket first.

b. It may not be possible to eliminate the rubbing against the flanges until the lower pulley is also adjusted by moving the outer end up or down on the tie rod.

c. It may be necessary to raise or lower the tie rods by adjusting the nuts at B.

d. To correct a slight twist in the Lower Pulley Bracket, one of the tie rods may be brought forward in the slot at B.

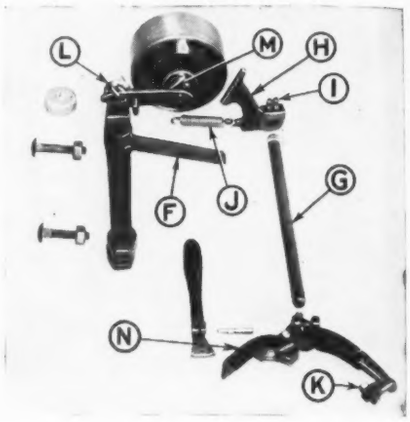
e. When the tie rods are brought forward in the slot, it is important to maintain the level of the Upper Bracket.

After adjusting the lower pulley, it may be necessary to make another slight adjustment of the Upper Pulley Bracket until the belt runs true.

If these adjustments are properly made, it should not be necessary to make any further adjustments for many months. If at any time the belt should rub continuously against one flange, the settings described above should be checked again.

ADJUSTMENT OF SPINDLE IDLER PULLEYS

Each Spindle Idler Pulley should be carefully positioned, as follows, for both operative and inoperative positions:



a. The Spindle Idler Pulley Bracket is attached to the tie rod by tightening first the end near the pulley, then the outer end. The Bracket is properly located on the tie rod when the Spacer (F) touches the Lifter Rod (G). However, if an extra-thick belt is used, the Pulley Bracket may have to be located further away from the Lifter Rod.

b. With the belt running, the Idler Pulley should be raised by the Lifter (H) so that it just clears the belt. The two screws (I) will tip the Lifter in the desired direction and lock the setting.

c. When the starting handle is pressed to start the spindle, the Lifter Rod (G) is turned, moving the Lifter (H) away from the Pulley. Tension is applied to the spring (J), and the Lifter is held in this position by the Locking Point (K) at Dog Segment.

d. The coil spring (L) in the Lifter Arm Adjuster causes the pulley to be pressed onto the driving belt. Enough tension should be applied to hold the pulley on the belt without bouncing, so the coil spring (L) should keep the Idler Pulley Arm (M) in contact with the Lifter at all times. However, if the spring is too tight, it will retard the stopping of the Spindle and application of the Brake (N).

See our Catalog in TEXTILE YEARBOOK

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THE OVERSEERS' CORNER

SALVAGE OF SCARCE METALS

A PETE AND BILL DISCUSSION

"Bill, are you making a real effort to salvage brass, copper, and aluminum, and keep supplies and repair parts at a minimum?" inquired Pete as he met his coworker at the mill gate one morning.

"You are not going to bother me with all that now," griped Bill, "when I can't get enough of anything to keep running, are you? Why, I'm doing my level best to keep my department on its feet. I know fellows right now that are looking out for themselves—one has put a new set of copper slasher rolls in stock and another's holding a carload of steel on a siding. Why should I break my neck saving?"

"Bill, I wish you wouldn't measure yourself by some other fellow. Think of how you can keep your own house in order, and perhaps he will do the patriotic thing later because of your good example. You'd be surprised how news gets around about the good things men do in our war effort. Start thinking now about how you can get every employee working on the care, repair, and salvage of precious materials, and you won't have time to worry about the chiseler."

Pete met his coworker at the millgate

"Well, it just burns me up," said Bill, "to see what some guys try to get away with. I save it and they get it."

"Now, Bill, you run along and cool off. Study over the idea for a while. I'm sure that you'll sell yourself on it. Then come back and we'll work out together a program to prove what can be done. All I ask is we give it a fair trial."

How can a mill best develop a plan to salvage vital metals?

Letters from Readers

Women Can Supervise

"Women Supervisors"
(Pete & Bill, May, 1942)

Editor, Overseers' Corner:

Of course, women should be permitted to take over supervisory jobs—but not just *any* woman, and, certainly, not just *any* supervisory job. I don't believe that women work better when they are supervised by a man. No, they work better when supervised by a woman, provided that woman is a leader in every sense of the word. Being a woman, she should be better able to understand women than any man could. Fortified with such an understanding, she should be able to manage women successfully.

However, if a woman is to handle women successfully, she must be a person whom her girls respect and who know she will play square with them and will play no favorites. She must be above pettiness, nagging, and unfairness.

POLLY RAYMOND (*W. Va.*)

Another Vote for Women

"Women Supervisors"
(Pete & Bill, May, 1942)

Editor, Overseers' Corner:

Sure, I heartily endorse women for supervisors' jobs in the mills. But Bill would stand aghast at the thought of giving women supervisors positions. We've got a fight for Liberty and Freedom, and win we must at all hazards. Men must do the fighting, they must face bombs, shot and shell, and die on the fields of battle. Women will do their part, in prayer, in the offices, the shops, the mills, the factories—and even supervisors' places, and they will do it well.

The great majority of the women of America will do their part. Intellectually, women, or many of them, can cope with men: they are accurate, painstaking, punctual and steady.

Now, Pete is right, doubly so. I dare say as much of Bill.

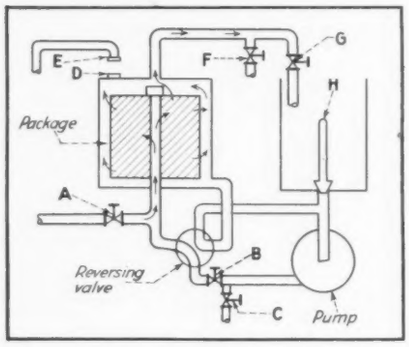
BURDINE WEBB (*Ky.*)

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you—contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 30 West 42nd St., New York.

Overseers' Practical Helps

Modifying Package Dyeing Machines

Acids, peroxides, and other chemicals now scarce and on priority lists must be used sparingly and every step taken towards conservation to preserve existing supplies.



A typical arrangement adaptable to package dyeing machines: *A*, cold water rinse line valve; *B*, shut-off valve to prevent recirculation, preferably a gate valve; *C*, drain valve to sewer; *D*, sampling port; *E*, waste pipe which can be clamped over sampling port; *F*, waste line valve from overflow; *G*, overflow valve; *H*, expansion tank plug.

An improved method of rinsing dyed yarn in package dyeing machines through a change in pipe connections, as illustrated, permits inside-out rinse with clean, cold water without any re-circulation of effluent liquor. Many yarn packages rinsed in this manner after dyeing require little or no chemical oxidation or neutralization, hence effecting savings in peroxide or other chemicals.

Unexhausted dye liquor may be removed quickly by this process and it aids in the production of crock-resistant dyes by removing all dye liquor before it can cause oxidation and precipitation. Again, the use of only pure, cold water for rinsing and the elimination of neutralizing minimizes undesirable removal from the fiber of dyes with very soluble leuco compounds, such as the Indigoids. (Extracted from *Dyelines and Bylines*, published by Calco Chemical Div., American Cyanamid Co.)

Maintenance of Hand Fire Extinguishers

Fire extinguishers, to be instantly available for use at all times, must be properly recharged and inspected. The date of recharging should be noted on the tag provided for that purpose, along with the name or initials of the man doing the work. Only recharging materials and replacement parts furnished by the manufacturers of the extinguishers should be used in service work. Instructions for recharging the various types of extinguishers given on the labels should be followed to the letter. Further suggestions made by the Safety Research Institute, are as follows:

Soda-acid: Recharge annually. If exposed to temperatures below 40° F., place in suitably heated cabinets. Do not mix anti-freeze crystals with the solution.

Foam: Recharge annually. Anti-freeze ingredients should not be added to the solution; if exposed to temperatures below 40° F., extinguishers of this type should be kept in suitably heated cabinets.

Vaporizing liquid: Recharge after use and keep unit filled at all times. Test action of pump by discharging a portion of the liquid into a clean, dry container. The test liquid can be poured back through the filler opening. Guard against overfilling. No lubricants should be used on the piston of this type of extinguisher, nor should any water be placed in it.

Loaded stream: Recharge after use; inspect annually to see if container is filled and that hose and gasket are in good condition. Weigh carbon dioxide cylinder and replace it if it has lost ½ oz. Extinguishers of this type may be exposed to temperatures as low as 40° below zero F.

Carbon dioxide: Recharge after use; inspect annally to note if seal is intact. Weigh the unit to make certain weight is equal to that stamped on it. Loss of 10% in weight indicates the need for recharging.

Anti-freeze, pump tank: Recharge after use; inspect annually to make certain it is filled to filling mark. Test pump action by operating pump for several strokes, directing the stream back into the tank.

Anti-freeze, other types: Recharge after use; inspect annually to see if container is filled and that hose, gasket, etc., are in good condition. If carbon dioxide is used for pressure, loss of ½ oz. in the weight of the cylinder is cause for replacing it with a new one.

Rayon Warp Sizing Practice

Up-to-date methods for handling viscose and acetate yarn to insure best results.

By ARTHUR C. WAYMAN

The third article of this series which appeared in the June issue discussed the elimination of many imperfections traceable to sizing practice. This final installment covers warp sizing formulas and the preparation of slasher reports.

SIZE FORMULAS as used by different mills, show tremendous variation. One factor to be considered is the relation of size formulas to weave room humidity. Some mills may find it advantageous to add a little more oil during dry seasons if their humidifiers do not compensate for atmospheric conditions. Some basic formulas suitable for different yarns, based on 100 gal. of water, are listed in Table I.

These size solutions will be found

Table I. Typical size formulas

Yarns	*Ingredients*			
	Water Gal.	*Gelatin Lb.*	*Oil Qt.*	*Penetrant Qt.*
75-den. viscose	100	27	2½	½
100-den. viscose	100	32	2	½
150-den. viscose	100	32	2	½
75-den. acetate	100	70	2½	½
100-den. acetate	100	71	2	½
150-den. acetate	100	71	2	½

Fig. 3

SLASHING REPORT

DATE

Quality | Set No. | Slasher

Type Yarn | Ends per in. | Denier per in.

No. of ends in warp | Size Formula

Temperatures | Speed (B) Yd. Min. | Steam Pressure lb.

Warp No.	Batch Gal.	Left Over	Used	Slashed Yd.	Stretch	Warp No.	Batch Gal.	Left over	Used	Slashed Yd.	Stretch

(A) Yd. slashed | Yd. warped | Gain (stretch) | Yd. = %

Efficiency $\frac{A}{B \times C}$

Set started | Set finished | (C) Total time

Signed

Enter all waste on back of this form.

entirely satisfactory, provided temperatures, quetsch roll pressure, yarn stretch and speed as mentioned in this article are observed.

It is particularly important that the temperature of the size bath be controlled carefully. High temperature reduces the viscosity of gelatin. Lower size temperature increases greatly the viscosity, and at the same time the penetrating power of the size is lowered. However, the addition of the penetrant to a size mixture will partly compensate for any possible temperature fluctuation and assure more even sizing.

Penetration controls slashing speed. Adding of more gelatin will not increase penetration of a high-count warp. The time of soaking is the only factor which will permit the size to penetrate sufficiently. Therefore, slower yarn speeds are necessary for warps with a higher end count.

One cloth defect which can be eliminated in slashing is shuttle marks. This defect is damaging, particularly in satin constructions. The addition of more oil to the size bath will act as a lubricant against possible friction of the shuttle against the warp ends and will practically eliminate these marks. Up to 1 qt. additional oil may be added, but such oil additions necessitate the cleaning of the loom reed after every other cut to avoid soiled knots and warp ends. In some instances where goods for pure white are made with piece lengths close to 100 yd., reed-cleaning may have to be done every cut.

Slashing reports are an important means of knowing what is going on in the slashing room at all times. A record should be kept for each set placed in the creel. Each loom beam should carry the set number. For instance, if the set number is 2,564 and the loom beam was the 16th one which came from the set, the beam would be known as No. 2,564-16. Thus, the record of this warp can be looked up at any time, showing exactly the size formula used, the yarn speed, cylinder temperatures, amount of size used, and yarn stretch. A slashing report for this data is shown above.

However, to record the history of a warp is not the only purpose of such a report. It will also have a psychological effect on the tenders by illustrating the importance of their task.

Of course, the final analysis of this report should be made by a responsible party, such as the foreman. For instance, the final total stretch obtained from the total yards warped in a set deducted from the slashed yards, plus allowance for waste should compare favorably with the individual stretch percentage shown for each warp. Any yarn waste made because of accidents or at the starting of a new warp should be entered on the back of the report.

Warp sizing is one of the most important processes in a mill. Various factors should be considered in preparing a warp for slashing if maximum efficiency is to be obtained. Some factors are as follows: (1) The type of yarn to be slashed must be considered—that is, viscose, acetate, or cuprammonium rayon—as different methods, temperatures, etc., must be used in handling rayon yarns of each type. (2) Yarn denier must be considered, because a fine yarn may be layed a large number of ends to the inch, and vice versa for a coarse yarn. (3) The number of picks to the inch in the cloth, the number of shafts used, the reeding, width of the cloth, etc., are factors that either increase or decrease the abrasion on the warp yarns, depending on the demands of the fabric construction. Increased abrasion necessitates better sizing and a change in size formula in many instances if the warp is to weave well at the loom. (4) Humidity conditions must be considered, as warp slashing may best be conducted under constant conditions. Otherwise, adjust the size mixture to compensate for dry atmospheric conditions by the addition of slight amounts of oil.

FORMER-GOVERNOR HOEY ADDRESSES CARTER EMPLOYEES

CARTER MILLS, Lincolnton, N. C., recently held their second annual memorial celebration in honor of the late A. B. Carter. Enjoying a holiday with pay, the employees were presented service pins for 5, 10, 15 and 20 years service in the company's mills. Dewey Carter (who presided) and C. E. Herrick were the only two who had seen 20 years continuous service. As special guests were many notables of the Piedmont section, including former Governor Clyde R. Hoey (shown above addressing the gathering); U. S. Marshall Chas. Price; Worth McKinney and Wm. M. Nicholson, assistant U. S. Attorneys; W. A. Merrill of the U. S. Secret Service; Sam Justice, columnist of *The Charlotte Observer*.

High-Speed Carding

Maintenance problems and duck weaving considered at S.T.A. meeting

INCREASING CARD SPEEDS, mill maintenance, and changing to duck weaving were the major problems discussed t the spring meeting of the Eastern Carolina Division of the Southern Textile Association, held recently at North Carolina State College Textile Schools, Raleigh, N. C.. George Gilliam, superintendent, Sterling Cotton Mills, Inc., Franklinton, N. C., presided as chairman.

Results of experiments with increased card-speeds were reported by A. R. Marley, superintendent, Erwin Cotton Mills, No. 1. Durham, N. C. Mr. Marley found from tests conducted on two cards—one at a speed of 165 r.p.m. and another at 198 r.p.m. cylinder speed, with other speeds proportionally increased—that total waste was increased 1.15% on the high-speed card over the slow-speed card, that breaking strength of warp yarn did not improve; on filling it did improve slightly; and that more even yarn was obtained. Running time for laps on high-speed cards was decreased 40 min. Comb speeds were held at 1,600 r.p.m. Mr. Marley pointed out that his results are somewhat different from those reported by George H. Dunlap (TEXTILE WORLD, May, 1942).

Other members had experience on speeding up cards to 185 r.p.m. Good results were obtained, although increase in power consumption was estimated at 12%. It was the consensus that at higher card speeds the increased cost and waste are negligible, when the needed increase in production and the quality was considered. The need of more research on the problem was emphasized.

W. C. Taylor, (left) N.Y. & N.J. Lubricant Co., Greensboro, N. C.; Geo. Gilliam, Sterling Cotton Mills, Franklinton, N. C., chairman of the Eastern Carolina Division.

MAINTENANCE under present conditions was discussed by D. M. Benson, assistant master mechanic, Crown Cotton Mills Co., Durham, N. C. After stating that the overseers and foremen should keep parts coming to the shop for repair promptly so welders and mechanics may keep a more even work schedule, Mr. Benson emphasized the fact that the overseers and foremen can employ welded parts and that they may as well decide to do so for the duration. In his shop, both acetylene and electric welding are used. Brass was once used to build up sand-roller necks, now the worn neck is replaced with a new one. Welding rods of scarce metals cannot be obtained on anything lower than A-1 priority rating; however, welders can work with annealed iron to replace the scarce metals. Mr. Benson recalled the old haphazard method of grinding out a "V" for a weld and then filling it up. Now the broken parts are aligned in a jig and a "U" is blown out without destroying the alignment. Then the "U" is filled with new weld metal. His welders have developed this technique to a point where they can float the new metal down so there is a minimum of filing and grinding necessary. After this is done, the welder turns over the jig and repeats the process on the other side. Sandroller necks or camshafts—anything over 1 in. in diameter — can be reclaimed more cheaply than they can be replaced. Loom shafts are cut off at the worn place, the parts set parallel in a jig, and the cut-out section welded in. This is a more satisfactory method than having the worn shaft reshaped in a blacksmith shop. Straight spur gears are best cut on an automatic gear machine.

Mechanics with imagination and ability can build gang tools for their lathes to speed production.

F. E. Bozeman, Jr., works manager, Whitin Machine Works, Southern Repair Shop, Charlotte, N. C., spoke of his company's success with electric machines for spraying metal on in making repairs.

CONVERSION of jacquard looms to weaving duck was described by T. W. Mullen, superintendent, Rosemary Mfg. Co., Roanoke Rapids, N. C. It was necessary to experiment on the running of the warp, the beat-up and take-down motion, and tension. The looms are operating well now, but it was far from the simple job envisioned to change jacquard looms to duck.

Slasher discussion was led by M. C. Harden, superintendent, Erwin Cotton Mills No. 1, Durham, N. C. Mr. Harden stated that chart records are helpful in determining slasher standards for various yarns and sets. Slashing singles duck yarn on the Cocker nine-cylinder slasher was outlined. Asbestos friction disks of increased thickness helped to eliminate soft warps. Cut selvage yarn can be eliminated by dressing expansion ends of press rollers to a convex surface, as found on new rolls. Warp sheets fixed to beams with sticks driven with warp into a beam slot insure good start-ups and eliminate the start of soft warps. Use of substitutes on slasher squeeze rolls is imminent. Sheeting and fine burlap weaves were mentioned as possible substitutes.

New officers of the division are: chairman, D. E. Long, Oxford (N. C.) Cotton Mills; vice-chairman, Virgil E. McDowell, Rosemary Mfg. Co., Roanoke Rapids, N. C.; secretary, Sidney Green, Eno Cotton Mills, Hillsboro, N. C.; new member of the executive committee, A. L. Oldham, of Erwin.

(Left to right) G. E. Moore, J. M. Odell Mfg. Co., Bynum, N. C.; D. F. Lanier, Oxford Cotton Mills, Oxford, N. C.; J. W. Cates, Edenton Cotton Mills, Edenton, N. C.; F. E. Bozeman, Jr., Whitin Machine Works, Charlotte, N. C.; D. E. Long, Oxford Cotton Mills, Oxford, N. C., newly elected chairman of the Eastern Carolina Division.

QUESTIONS & ANSWERS

Finishing 18-oz. Olive Drab Serge

Technical Editor:

We have just started to weave an Army order for 18-oz. olive drab serge and we are interested in learning what finishing operations are needed. Are there any special precautions we should take? (8863)

The general finishing procedure for 18-oz. olive drab serge is as follows: (1) burl and mend; (2) tack face inside for fulling; (3) scour; (4) extract and remove tacking; (5) dry; (6) shear back and face; (7) speck; (8) press; (9) decate or mantle; (10) condition; (11) examine; (12) roll and measure; and (13) strength test of warp and filling.

The fabric must have the proper strength in the grease, both in the warp and filling to insure the proper strength when finished. The general layout of the fabric will determine whether or not full decating is necessary; that is, the weight from loom and the necessary amount of fulling shrink to obtain the finished weight. Care must be taken in controlling shrink after sponging, in both width and length, to Government specifications. The warp allowance is 4%; usually some form of setting is necessary after finishing to control shrinkage.

The control of color after once established and accepted by the Government is definitely a responsibility of the finishing room. Routine in decating or mantling has considerable to do with the effect of the shade.

Redyeing Rayon, Cotton and Combinations

Technical Editor:

We dye rayon, cotton, and also combinations of rayon and wool, in certain shades using direct dyes which can be aftertreated with metallic salts—bichromate of soda and copper sulphate. When it is necessary to redye or touch up an off shade lot, we find it next to impossible to get any dye to go on the fiber after said aftertreatment. Of course, we realize that there should be no redyeing necessary after the metallic salts treatment, but nevertheless it does happen. Can you recommend any method by which we could do shading up? Also, can you tell us whether viscose rayon is being colored in the form of tops by all methods of dyeing—direct, developed, sulphur, and vat? If so, on what type of machines. (8860)

Redyeing of materials which have been dyed and aftertreated is sometimes a difficult job. Many of the difficulties can be prevented by making laboratory dyeings before you attempt to redye the whole lot. For touching up, the following dyes are the type recommended: Benzo Fast Black L (Pr. 24), Fastusol Yellow LRTF, (C.I. 814), and Benzo Fast Scarlet 4BA, (C.I. 327). The fastness may not be as good as the original dyed shade, but the match may be more desirable. If fastness is of little importance, the match may be topped cold with almost any basic dye.

Viscose rayon tops are dyed with all classes of dyes which you mention. The type 15 is determined, to a large extent, by the class of dyes to be used and the equipment available. Direct colors may be dyed in the basket type of machine where the tops are piled in a mesh basket and are then dipped into an open tub. Sulphur, vat, and naphthol colors usually are dyed in pressure machines. Machines of the open-kettle type are often used for developed colors.

Manufacture of Duck

Technical Editor:

We are pile fabric manufacturers and have made the inclosed sample of duck on one of our plush looms. This was made for Type 2, Table 2, 8-oz. duck (9.85 oz. per sq. yd.). We know that we have more ends than called for in the specifications, as we have 4,100 ends of 16/2 in the warp; the sample is 60¾ in. wide, which gives us 67½ ends per in. against 48 required. For filling we have 20/2 cotton, 34 picks, which is the number of picks required in the specification. This sample weighs 14.7 oz. for 60¾ in., or 8.74 oz. per sq. yd. The following things we know have to be changed: the size of the warp yarn and the number of ends; possibly the reeding, as our present sample was reeded 4 ends per dent.

We shall greatly appreciate any recommendations and constructive criticism you can furnish. We understand that the Government is purchasing this weight duck in 61-in. width. Our present sample is the highest texture we can make with the present yarn construction. We hope that you can let us know promptly your findings so that we can make headway quickly. (8857)

This particular sample fails to meet the Government requirements in so many respects that, rather than discuss each element, it probably will be helpful to give you the construction and yarn numbers we would suggest using in order to conform with this specification.

To have the required margin of safety over the minimum Government requirements, the fabric should weigh 17.12 oz. to the 61-in. width, with a count of 54x38.

We suggest weaving the cloth with 14/2 warp with 2-ply filling to give the required weight, which should run around 15s.

To have the correct distribution of strength, the fabric should have 62% of the weight in the warp, and the above-suggested construction should give this distribution. The sample submitted was entirely too reedy, and we recommend drawing the warp one end to the harness-eye and three ends to the dent.

It is important to maintain the distribution of weight so as to have the required distribution of strength; but you should have no difficulty meeting the strength requirements if you are using the proper quality and staple of cotton.

"Open-Face" in Rayon Crepe

Technical Editor:

We are sending you a swatch of rayon crepe for your opinion. You will notice an "open face" on this swatch. The cloth was woven in one of our mills which has been running this particular construction for several years, and this is the first time this condition has suddenly come up. The construction of the crepe is 135 x 64 with 100/34 dull acetate rayon in the warp, and 100/40 viscose rayon in the filling, with 57½ turns in the crepe. (8842)

The "open face" mark, in weave-shed parlance is known as an irregular or wavy set. Occasionally such marks are caused by pick-backs or rip-outs to remove some defect in the woven cloth. After a new set has been made and the loom started in operation, the filling yarn scatters itself through the various impression creases remaining from the former threads, causing a wavy set-mark or irregular mark. This mark, however, can usually be detected after the cloth has been finished by carefully examining the selvage. Such a set always shows a rip-out, due to the clipped filling yarn at the edge where the new start has been made. These marks are very infrequent, as usually many defects are allowed to pass through in order to avoid these full-width marks.

However, the sample submitted shows no loom fault, but is a slasher defect. Without doubt, the sizer has been stopped during the process of taking

the warp through the rollers, allowing the spot shown by the "open face" to lie for a certain period of time in the sizing solution. This results in the warp yarn taking up a heavy load of size, which is not squeezed out when the warp passes through the rollers. When the warp is mounted in the loom, these spots will range in length from a few inches to a yard or more for the full width of the warp, according to the period of time the machine has been stopped, as well as for the reason. As methods of sizing vary, a warp may contain several such spots, or none at all. Now for the reason.

In rayon weaving, the sizer catches and corrects the warper's errors. Thus, if an end is lost and a ringer made, it must be removed. And in removing the ringer, the warp is stopped, resulting in a hard spot, which in turn leaves the "open face" mark. Also, some plants place several lease strings in the warp —perhaps three or four between the start and finish of the warp. When these lease strings come up, the sizer must stop to correct mistakes and place in new strings by throwing a new cross. Some plants avoid this, finding it satisfactory to run a full warp without lease strings except at the start and one at the finish. It appears likely that the weaving plant is using a new man on the sizing machine, or warper, and/or placing lease strings between warp ends.

Quite naturally, after the hard spot is once in the warp, it will leave a wavy mark the full distance of its length. During weaving, the filling threads pack tightly in some places and spread loosely in others. The correct number of picks per inch can be counted, but these picks will vary in ¼ counts. They cannot be corrected in the finishing—once in, they stay in.

Suggest to your mill to avoid stops during sizing. If it is necessary to place in lease strings, make the cut-off mark at the hard spot, which may be several yards previous to the cross when weaving on the loom. We suggest careful supervision of the sizing operation.

Removing Tint from Rayon Fabric

Technical Editor:

Inclosed is sample of gray fabric made from acetate and viscose continuous-filament rayon. After thorough scouring, the tint was not removed completely. Kindly advise the best and cheapest method to remove the tint entirely. (8856)

This tint was evidently set by the use of too much heat in sizing. It can be removed by one of two methods. Treating with a weak solution of sodium hydrosulphite probably will be the cheapest method of removing the tint. The hydrosulphite can be used separately or it may be added directly to the scour. In the latter case the pH of the initial bath must be elevated slightly to offset the fumes given off by the hydrosulphite. Such fumes (sulphurous acid gas) might otherwise cause a decomposition of the soap used for scouring. However, if you are using a fatty alcohol for scouring, there is no danger of any decomposition during the scour even if the hydrosulphite is added directly to the stripping bath.

The second method for removing the objectionable tint is the use of potassium permanganate followed by a second treatment with bisulphite of soda. This second method will also result in a bleached white. Thus, either means may be the cheaper depending on the final results desired.

Weaving Rayon Nettings

Technical Editor:

We are weaving nettings from 50- to 75-den. rayon and have a couple of questions regarding proper procedure. First, should sand rolls be covered with cheesecloth as mentioned above, should there be many broken filaments or fuzz when we purchase the yarn and will the number of broken filaments and the amount of fuzz be increased by the time the yarn reaches the loom beam? (8849)

It is always advisable to cover sand rolls with cheesecloth where sandpaper is used as cover. This precaution will eliminate any possibility of the netting being injured by the abrasive.

First-class yarn should be free of fuzz, although at the present time one cannot be too particular and may have to be satisfied with inferior yarn for the sake of getting any at all. If fuzz is found in the raw skeins and cones, it should be wound through cleaners. If there is still a prohibitive amount of fuzz left over, the warp has to be cleaned by the warper if the silk system of warping is employed, or by the weaver or extra help during weaving if the warps are made on the cotton system.

If good porcelain guides are used in winding, good reeds in warping, and good heddles and reeds in weaving, there should be no increase in broken filaments over the amount originally found in the raw yarn. Of course, if the yarn contains twist, the flyers on the spinning frame must also be in good shape.

Percentages of Component Yarns in Novelties

Technical Editor:

I am a foreman on novelty twisters, and am having trouble in finding the percentage of component yarns in novelties. I use 10 in. in a twist tester.

Will you advise me how to find the percentage of each component in a novelty. (8853)

It is assumed that you are using the let-off on your twist tester to obtain the length of each component in a novelty yarn, but, if not, here is the way to do it.

Fasten the yarn in the sliding jaw of the tester and, holding the other end of the strand near the revolving jaw with one hand, release the catch on the sliding jaw with the other. The indicator should be allowed to move a slight distance, ⅛ to ¼ in., down the scale, then should be pulled back to zero by tension on the free end of the yarn. While holding the indicator on zero by maintaining yarn tension, fasten the other end of the yarn in the revolving jaw.

Untwist the yarn until the binder strand comes free from jaw to jaw, which can be ascertained by use of a pick needle slipped between the ends. Note how far the indicator has moved down the scale, which distance is the length of the tightest strand. Break out the tightest strand, and ease the sliding jaw down until it stops again. Do not allow the weights to pull the jaw so that the remaining ends are snapped taut.

If several ends remain, repeat the procedure of noting distance and removing the tightest end until length of all ends have been obtained. If a loop end proves to be longer than the sliding distance of the jaw, it can be measured with a ruler.

Now, regarding the calculation of percentages of the components, there are two methods: on the basis of length, and by weight. The so-called "percentage by length" is an expression of the length of a component per unit length of the novelty, and is always more than 100. It actually is not a percentage. Multiply the length of component in 10 in. of novelty by 100 (for per cent), and divide by 10. Thus, if 12 in. of a component were contained in 10 in., the percentage would be 120.

By weight, the calculation for spun yarns is: length of component in 10 in. of novelty times yd. per lb. of the novelty, times 100 (for per cent), divided by 10 times the count times the standard. For rayon yarns, expressed in denier, the following changes in the calculation should be made: drop count from the bottom line and insert in its place the figure 5.315, and insert the yarn denier on the top line.

FREE FOR THE ASKING

PUBLICATIONS ON PLANT PROTECTION

Warfare gases, effects of the principal war gases, and their characteristics are described along with suggested first-aid treatment in a booklet entitled "Warfare Chemical Hazards", which is offered by Pennsylvania Salt Mfg. Co.

Wire fences as an aid in combating saboteurs is discussed in an article titled "Where Will the Saboteur Strike?" in the April issue of *Fence Points*, issued by Page Fence Association. A booklet entitled "Exhibit B" also offered by the same company, illustrates a number of important points to be considered in fence construction.

Mill sanitation, consisting of such items as disinfectants, efficient deodorization, general cleaners, paper towels, floor maintenance, etc., is discussed in a booklet titled, "The Scope of Sanitation," issued by West Disinfecting Co.

Industrial accidents and their relation to illumination, the cost of lighting compared with the cost of accidents, and the relationship that illumination plays in regard to the health of industrial workers is described in a pamphlet entitled, "Lighting Safety and Welfare," issued by General Electric Lighting Sales Institute.

A manual containing rules, regulations, and much instructive information for watchmen and guards such as: the training of watchmen, watchclock system, organization of a company guard and a discussion of various types of fire extinguishers and hints concerning their use, are outlined in, "Plant Protection for National Defense," issued by Detex Watchclock Corp.

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Ventilation problems in blacked-out plants is discussed in an article with regard to the problem of ventilating plants in summer and in winter with units that must be weatherproof and lightproof. This article is contained in the February issue of *Trane Weather Magic*, published by Trane Co.

Protective lighting of mill yards and buildings with intent to discourage entry, and to have such equipment function efficiently is outlined in a bulletin entitled "Protection with Light," which is issued by Westinghouse Electric & Mfg. Co.

Identation badges consisting of a badge with a transparent window to permit a photograph of the employee to be inserted, is described, along with various types of safety pins and buttons in leaflets issued by Royal Emblem Co.

Preventing accidents by means of non-slip floor polishes, resurfacing worn stair treads, worn floors and those about machinery with a suitable abrasive composition to eliminate slipping of operators, is covered in a leaflet issued by Walter G. Legge Co.

Lighting the outside of mill yards and building exteriors for protection against sabotage, along with useful information on protective lighting is covered in two booklets, one entitled "Protective Lighting for Industrial Plants," and the other, "Protective Lighting," issued by General Electric Co.

Safety equipment such as gas masks, steel helmets, safety belts, portable floodlights, safety goggles, asbestos gloves and protective suitings for fighting fires and first-aid kits are described in a bulletin called "Safety Equipment" issued by Mine Safety Appliances Co.

War-time lighting guide titled "Specifications in Productive Lighting for War plants" is announced by Benjamin Electric Mfg. Co. This manual contains information and data on the use of lighting as a production tool in solving the problems of production, rejects, employee fatigue, accidents and morale, greater utilization of floor area, windowless plants, 24-hour operation, etc.

Fire-fighting is illustrated graphically by three-color poster issued by Walter Kidde & Co. showing the correct method of using carbon dioxide, water and foam, and vaporizing liquid fire extinguishers, and the hazards for which each type is suited.

Insurance of textile plants is discussed in a bulletin "Fiber in Insurance," issued by American Mutual Liability Insurance Co. Conservation of textile manpower through accident prevention and the relation between a plant's accident record and its efficiency are considered, and American Mutual's services to the textile industry are listed.

Occupational dermatitis, its causes, prevention and protection are discussed in a booklet entitled "The Answer to Industrial Dermatitis." The use of specially compounded salves upon skin exposed to industrial chemical hazards is shown in this booklet, which is published by The Milburn Co.

Slip-proofing of floors and stairs with a powder so as to prevent accidents from slipping and falls, is discussed in a folder "Slip-not" which was prepared by Sugar Beet Products Co.

Employee morale is discussed in a pamphlet issued by the Labor Relations Institute entitled, "How To Boost Production through Increased Employee Morale." This booklet covers the formulation of employee suggested systems and the installation of effective grievance machinery for improving employee-employer relationships. The matter of union and employee cooperation, use of posters, bulletin boards and loudspeaker systems as methods of increasing production is discussed.

Increasing production by the installation of time and motion studies, and job evaluation is discussed in a booklet entitled "More Production Better Morale," prepared by Bedaux Co.

Dermatitis caused by the use of improper soap is covered in a folder titled "7 Reasons for Adopting Formula SBS-11 in Your Plant." Prepared by Sugar Beet Products Co., this folder discusses the important part that liquid soaps play in the matter of preventing skin infections among employees.

Safety equipment for accident prevention is described in Catalog 40 issued by The Boyer-Campbell Co. Items such as face shields, goggles, dust respirators, safety belts, gloves for various purposes, first-aid equipment, fire-fighting equipment and safety ladders and guards for automatic machinery are described in this catalog.

Protecting the eyesight of skilled workers by means of proper illumination and balanced lighting as a means of aiding the war effort is discussed in a bulletin entitled "Good Lighting—A Production Weapon," Series No. 442 prepared by Fostoria Pressed Steel Corp.

A conservation booklet on office supplies entitled "It's the Little Things that Count," is offered by Allis-Chalmers Mfg. Co. The booklet points out the importance today of conserving even the most minor office supplies and the best methods for prolonging the life of items commonly used in offices.

Incendiary bombs of the oil type require means other than those used for the magnesium type bomb. Methods of extinguishing fires caused by this type of bomb are discussed, along with an article on protection against incendiary fires, in the June issue of *High Pressure*, published by Walter Kidde & Co. Several other items of interest are contained, notably about fighting tank truck fires.

* * *

MANUFACTURERS' BULLETINS dealing with plant protection, safety, etc. which have been noted in this department during the last year.

Protective fences of chain link type. Anchor Post Fence Co. (Aug. '41.)

Link fence. Page Fence Association. (Sept. '41).

Floodlight practice for night-time protection of buildings. Westinghouse Electric & Mfg. Co. (Dec. '41).

Fire-retardant paint. National Lead Co. (Jan. '42).

Prevention of industrial dermatitis. Magnus Chemical Co. (Feb. '42).

Fluorescent and phosphorescent materials in black-out preparations. Calco Chemical Div., American Cyanamid Co. (Feb. '42).

Electrician's rubber gloves. B. F. Goodrich Co. (June '42).

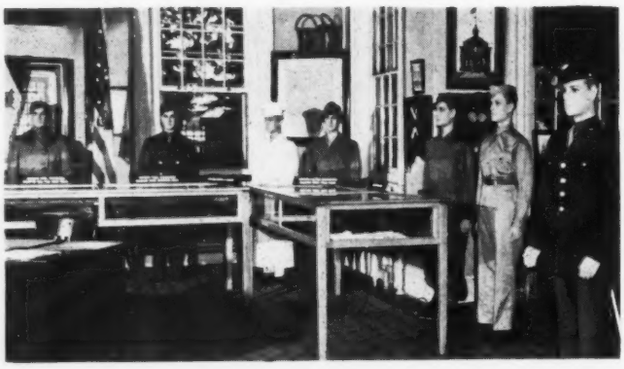
NEWS OF THE MONTH

U. S. Buying S. A. Surpluses

Because of blockades and counter-blockades, virtually the entire market for South American exports has been wiped out. This creates hard times and fertile ground for planting seeds of discord by the Axis.

The United States appears to be meeting this problem with "economic diplomacy"—buying up Latin American production, maintaining normal conditions in the countries involved, and taking control of vast stores that will be needed to rehabilitate the world after the war.

One of the first major moves in this direction is the purchase of the entire cotton crop of Peru, 400,000 bales, at a cost of $44,000,000, by the Commodity Credit Corp. The cotton, a long staple of excellent quality, will be stored in Peru, out of the reach of submarines, for the duration. Cotton and other crops of various Latin countries will be taken over in this manner from now on.



QUARTERMASTER'S 167TH ANNIVERSARY: Display in Carpenter's Hall, Philadelphia, by the Army QM to mark founding of Corps 167 years ago in the same building. Mannequins showing modern uniforms are the same as those shown on pages 58 and 59 of June issue of TEXTILE WORLD.

On Listing Learners

Learners must be listed on the employer's payroll in a separate group, under an amendment to general regulations of learners, issued by the Wage-Hour Division, effective June 25. Records of any experience in the previous five years must be kept by the employer in the form of individual statements signed by the learners. No certificate issued by the Administrator may authorize the use of learners in more than one plant. Violations will result in cancellation of certificates.

Requests Ban on Conventions

Deferment for the duration of all meetings, conventions, and group tours which are not closely related to furtherance of the war effort has been called for by Joseph B. Eastman, Director of Defense Transportation. Attendance at meetings which are closely related to the war program should be skeletonized, Mr. Eastman said.

OPA Would Change Government Contract Prices

General Maximum Price Regulation, effective April 28, covered nearly the whole gamut of goods not already covered by specific orders, and it covered deliveries of goods to the military services. But the Regulation provided that the Price Administrator could exempt from GMPR any military goods justifying a higher price, or he could set up a special method for computing ceilings where necessary.

Some wool cloth manufacturers complained that the GMPR prices reduced the rates on cloth contracted to the Services months ago, and asked for adjustments that would enable them to deliver at a normal profit.

OPA then promulgated Price Regulation No. 157, which provides a special method of computing the ceiling on certain textiles. OPA officials say this new scale gave the wool cloth manufacturers the increased difference between costs now and the time they made their contracts, so that now their earnings are the same as they would have been without GMPR.

But the National Association of Wool Manufacturers charged that OPA was using GMPR to override Army and Navy procurement officers; that OPA's action is in effect a repudiation of Government contracts; that many mills will be financially unable to complete deliveries because OPA's new formula works irregularly and "accidently." Failing to get any further negotiation with Administrator Henderson, the NAWM, through Arthur Besse, president, made a direct appeal to members of Congress for relief.

OPA officials told TEXTILE WORLD, in answer to inquiries, that all due compensation is made to the manufacturers in Order 157; that if GMPR constitutes a breach of contract, so does the entire price ceiling program. They said they were ordered by the President to carry out the anti-inflation program. Two or three Congressmen had called OPA, they said, but so far as they knew none had taken any action.

Meanwhile, the Quartermaster General amended outstanding invitations for bids, to conform to Order 157.

Reports Effects of Different Card Speeds

Effects on cotton-yarn quality of different flat and licker-in speeds in carding are reported by Prof. G. H. Dunlap in a recent release outlining the results of tests conducted in a southern mill. The study indicates that when flat speeds were increased from 2.96 to 4.31 and 5.91 in. per min., respectively, waste in the form of flat strips increased, card silver became less uniform, appearance of the web deteriorated, and neps were more numerous; yarn strength was not affected materially by the increased flat speeds. Increasing licker-in speeds from 438.5 to 486.5 and 524.8 r.p.m., respectively, has no significant effect on carding or yarn quality. The tests were conducted under the sponsorship of the Textile Foundation, the Arkwrights, and the Southern Textile Association. Reports of experiments with increased cylinder speeds appeared in our April and June issues.

Now the Philadelphia Textile Institute

The Philadelphia Textile School will hereafter be known as the Philadelphia Textile Institute, it has been made known by M. Earl Heard, dean. The decision to change was voted by trustees of the Philadelphia Museum of Art, of which the Institute is an integral part. Last October the school won the right to confer the degree of Bachelor of

Science in Textiles to four-year students for the first time in its long history, and the change in name is an outgrowth of that development.

Compiles WPB Orders

The Cotton-Textile Institute has issued to its members a loose-leaf folder containing a compilation of War Production Board priorities, preference ratings, conversion orders and all other regulations, as amended to date, that bear directly on cotton manufacturing. Most of the orders and directives are photographic reproductions from the Federal Register.

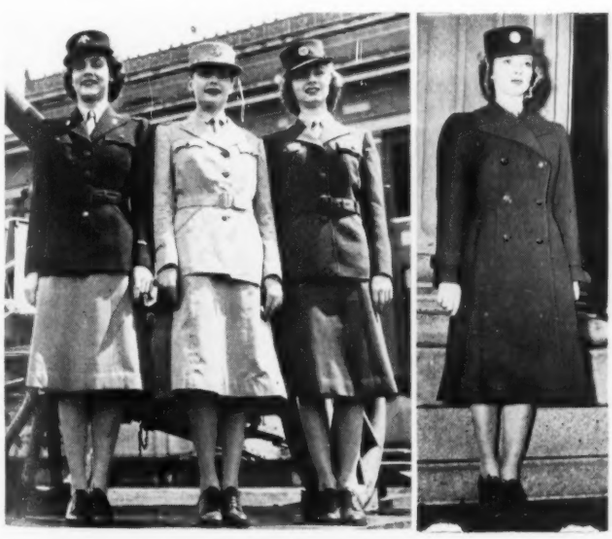
The folder has six main divisions: (1) Official documents establishing the WPB; (2) a description of the priorities and allocation system together with copies of basic regulations; (3) specific blanket preference rating orders affecting the procurement of textile mill supplies; (4) General Preference Orders restricting materials either made or used by cotton mills; (5) Conservation Orders; (6) Limitation orders, the most important being L-99 covering conversion of looms to bag fabrics.

A Bond Mark to Shoot At

Nearly 97% of the 7,179 employees of Avondale Mills of Alabama, contacted up to the middle of June, had allotted 10% or better of their incomes for regular War Bond purchases, according to Hugh Comer, executive vice-president. War Savings Staff officials in Birmingham said that on the basis of reports available there, Avondale Mills' record in percentage of income pledges is one of the nation's outstanding reports.

The Story of Manpower

"Work Will Win—The Story of Manpower" is the title of a pamphlet issued recently by the War Manpower Commission, Washington, D. C. Following a foreword by Paul V. McNutt, chairman of the commission, there are chapters



THE WAACs WILL BE WELL DRESSED: Above are shown members of the Women's Army Auxiliary Corps in their uniforms as authorized by Army QM, which will provide the equipment. Left to right are officer's winter uniform, officer's summer uniform, private's uniform, and overcoat. There are 25,000 of these women to be outfitted at present with an authorized personnel of 150,000.

Devoe **WALLUSTRE** Paints
HELP STEP UP PRODUCTION FOR VICTORY

Given the most efficient machines, the most modern plant layouts, and the best skilled workers, production can never reach its peak unless these workers can *see* what they are doing with a minimum of eye-strain and resulting fatigue. Seeing conditions depend on paint as well as on lighting systems. Properly painted walls and ceilings can increase the light available—daylight or artificial—as much as 62%. Scientists in Devoe's famous research laboratories have developed a complete, new line of Wallustre Maintenance paints that is stepping up efficiency in many different lines of industry, conserving and maintaining valuable properties in top condition.

If peak production is your goal, call a Devoe Maintenance Representative trained to help you solve this phase of your problem. Perhaps you need a special moisture, fungi or fume resistant paint. Devoe has what you need with unusual hiding and spreading qualities which make these scientifically formulated paints economical to use. Write us today for descriptive pamphlet (WL-2) on Devoe Wallustre Maintenance Paints.

By improving sight with paint you help the National Safety Council's drive to reduce accidents and conserve America's vital manpower for war production.

DEVOE & RAYNOLDS CO., INC.

The 188th year of the oldest paint-maker in America

FIRST AVENUE AT 44th STREET, NEW YORK, N. Y.

Your
WATCHMAN
can keep me away

Every plant has its danger-control stations. When they are alertly and constantly patrolled, danger of fire, of theft, of accident and of SABOTAGE is cut to the minimum; heavy losses and work stoppage are averted. Your Watchman is your safety factor. His movements must be controlled. Protect him and protect yourself with the most dependable watchclock equipment you can buy—the

CHICAGO WATCHCLOCK SYSTEM

FOUR MODELS: SPARTAN: MINUTEMAN: CHICAGO SPECIAL: CHICAGO THIRTY

For more than sixty years the Chicago has been the Standard Watchclock System of industry and commerce. It is simple, flexible, foolproof. It has a capacity for any required number of stations, and every morning delivers positive proof that every station has been regularly patrolled.

Approved by the Underwriters Laboratories, Inc., by the Factory Mutuals Laboratories, and recommended by leading insurance authorities. The system includes sturdy clock in leather carrying case and complete complement of Stations and Seals.

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111 JOHN STREET • • • • • • NEW YORK CITY
1417 W. 11th STREET • • • • LOS ANGELES, CALIF.

American women who are going "back to the farm" to help fill the nation's breadbasket will be wearing costumes like this cotton field suit. The Maid of Cotton (Camille Anderson of Memphis, Tennessee) demonstrates how two-way sleeves may be worn short for coolness or long for sunburn protection. The legs of the slacks are shaped in and secured with a slide fastener at the ankles to prevent catching on farm equipment or field stubble, or dragging in the dust. Clarice Scott of the U.S. Bureau of Home Economics designed this costume. Photo by Courtesy of Cotton-Textile Institute.

on: "There Are Enough of Us"; "What We Need to Do"; "How We Can Do the Job"; "Where Women Fit In"; "Farmer's Fight"; "The President's War Manpower Commission Order."

Booklet on Informative Labeling

Pacific Mills has published a booklet entitled "How Can Informative Labeling on Fabrics Help Me Contribute to the War Effort?" The data contained is the result of actual experience with thousands of manufacturers, retail stores, sales people and consumers. The information applies not only to the Pacific Factag, but to the question of how the housewife at home can help the war drive. Copies are available on request to Pacific Mills.

Wool Allotment for Six Months

War Production Board on July 1 took action intended to increase the amount of wool cloth available for civilians from the limited quantity of new wool available for them. Wool conservation order, M-73, has been extended for six months, amended to decrease the wool available for all-wool fabrics, but to increase the new wool available for cloth that is mixed with reworked or reused wool, or cotton or rayon. Worsted mills receive 20% of their basic quarterly poundage for the 6 months with 25% more if this added supply is blended with at least 35% of other fibers. Woolen mills get 5% of their basic poundage, but an added 25% if blended with at least 35% other fibers. The amount of new wool for the armed forces continues unrestricted.

Woolknit Associates Present Fall Fashions

The sixth semi-annual fashion show of Woolknit Associates was presented early last month at Hotel Pierre under the direction of June Hamilton Rhodes. Among the features were such timely items as outfits for air-raid wardens who will be patrolling during cold nights in the coming fall and

DYEING HITS A HIGHER LEVEL

with SUNOTEX OILS

EASIER SCOURING . . . QUICKER PENETRATION . . . BETTER HAND

Ever wish that you could always match difficult shades . . . get level dyeing . . . and assure a fine hand whenever you dye rayon? Well, that's been the experience of a large dye house since they have been using SUNOTEX RS 48. This processor uses SUNOTEX OIL right in the dye bath — about 2% by weight of goods — and the results have been truly amazing. Scouring has been easy and complete . . . penetration quick . . . and level dyeing has been unusually satisfactory.

Whether you are processing rayon or wool just remember there's a SUNOTEX OIL to help you do the job better and a Sun Textile Man — one of those Doctors of Industry — to aid in solving your problems. This service is yours to use to improve production . . . and for proof of what it has accomplished in the textile industry write for your copy of "Helping Industry Help America".

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SUN PETROLEUM PRODUCTS HELPING INDUSTRY HELP AMERICA

Put Your Mill on a "FIGHTING BASIS"!

Let Amco Engineers make a survey and report how to do it!

There's nothing like *correct humidification* to help you get maximum, top-grade production from every machine! For either war or peacetime orders, it puts you on a "fighting basis" . . . eliminates static, dust and fly . . . makes fibres more workable . . . reduces breakage and imperfect goods.

Why not investigate this important production aid? Without obligation, Amco engineers will determine your exact requirements and submit a complete report including detailed plans for an automatic, production-boosting Amco Humidification System.

Get the Jump on Competition

Even if lack of priority prevents immediate installations, now's the time to "get the jump" on future post-war competition. Place your advance order for Amco Equipment . . . and you'll get *preferred delivery* when peace comes! American Moistening Company, Providence, Rhode Island . . . Atlanta . . . Boston . . . Charlotte.

Amco HUMIDIFICATION

J. ELMER HAHN, newly elected president of the New York Alumni Club of the Philadelphia Textile Institute (center) who presided at the June meeting of the club. He is vice-president of Lebanon Woolen Mills. At left, R. E. Sumner, of Calco Chemical Co., who spoke; at right, Dean M. E. Heard, head of the Institute.

winter; free-action dresses for aircraft warning service volunteers; separate jackets, skirts, sweaters, slacks and vests for additional warmth in a "rationed heat" winter; well-tailored casual suits; warm casual dresses; practical coats; and warm comfortable costumes for dining at home. Sixteen knitted outerwear mills showed models and several garment firms displayed models made from knitting fabrics. There were four makers of hand-knit garments represented.

OEM Handbook

An "OEM Handbook," describing the functions and organization of the war agencies within the Office for Emergency Management, has been issued. The 72-page booklet describes in detail the organization of the WPB, the OPA and the other constituent agencies of the OEM. Personnel is listed in most cases down to the branch level in each agency. Included are organization charts of the WPB and the Bureau of Industry Branches of the WPB Division of Industry Operations, as well as a chart showing the relationship of the various Federal war agencies. Copies of the booklet are available in Room 1501, New Social Security Building, and from the Superintendent of Documents, Washington, D. C., and at OEM field offices.

Acetate Rayon Hosiery

One of the first full-fashioned mills to announce commercial production of acetate rayon hosiery is Lark Hosiery Mills, Shamokin, Pa. Present production is 2,000 doz. weekly. The hosiery is 45 gage and is made from 75-den. leg yarn and 120-den. welt yarn. Over 100 full-fashioned mills are now experimenting with acetate rayon in various sizes. For the most part, 75- and 100-den. is being used for the leg and 120- and 150- for the welt. It is reported, however, that at least one manufacturer has made experimental hosiery from 55-den. acetate rayon with a special twist.

TEXTILE CALENDAR

National Chemical Exposition, Stevens Hotel, Chicago, Ill., Nov. 17 to 22, 1942.

National Exposition of Power & Mechanical Engineering, 15th annual show, Grand Central Palace, New York, Nov. 30 to Dec. 5, 1942.

Now—on all oceans!

Textiles go to the farthest corners of the earth with America's fighting bluejackets . . . clothing them, protecting them, keeping them fit.

He's a busy man . . . the American sailor. He works all day, every day . . . in rain and bad weather or in bright, strong sunshine.

He is alternately exposed to sea water, fresh water and a lot of perspiration. The space for his clothes is necessarily cramped.

It calls for tremendous yardages of the most rugged fabrics the Textile Industry can produce.

It demands all-out production from every machine to produce all the clothing and equipment needed by our armed forces, plus the essential textiles for civilian use. Only in its mechanical equipment is the Textile Industry vulnerable.

In the Wet End of Textile Finishing, you, the Mills, must seize every opportunity to repair or replace worn-out equipment.

The breaking of production bottlenecks is a vital contribution to the cause of winning the war. It is part of our job to help you maintain and even increase the flow of Textiles for Victory.

All of our facilities not required for Ordnance production are available for building Finishing Equipment. Deliveries on appropriate priorities to mills serving the war effort.

***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Figured by Research

H. W. BUTTERWORTH & SONS CO.
Phila., Pa. Serving the Textile Industry since 1820
Offices in Providence, R. I. and Charlotte, N.C.
In Canada: W. J. Westaway Co., Hamilton, Ont.

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No Humidifier can possibly have Everything
Every Humidifier has Something

Certified CLIMATE

is applied engineering;
"something" for "something";
the right "something"
for the work you need
and want done.

HIGH DUTY

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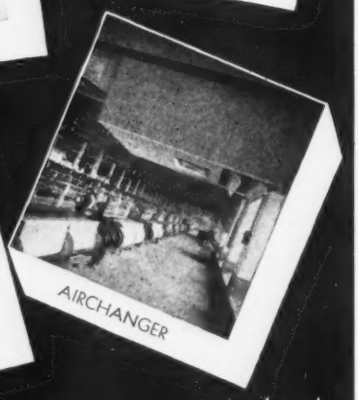
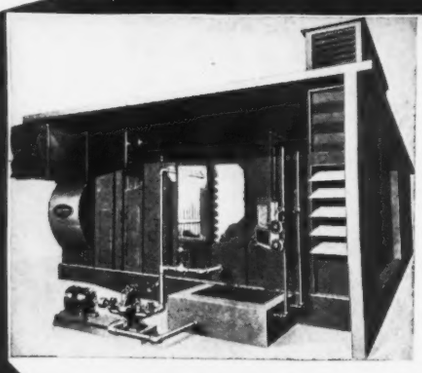

AIRCHANGER


CENTRAL STATION

Parks-Cramer Company
Fitchburg, Mass. Charlotte, N. C.

Some Scrap!

More than 5,000,000 lb. of metal and other scrap materials needed for production of airplanes, tanks, guns and other types of war equipment had been salvaged up to early June by the seven plants of the American Viscose Corp., which commenced their "Salvage For Victory" drive on March 1.

Bemberg Offers 30- and 35-Den. Yarn With 74 Filaments

American Bemberg Corp. has recently introduced 30- and 35-den. yarn with 74 filaments. The new yarn is 25 to 30% stronger than the standard Bemberg yarn and is said to be the finest denier of rayon yarn being produced regularly. Current production of the new yarn is being used exclusively in the manufacture of fabrics for flare chutes.

A.A.T.C.C. Notes

Due to war conditions, the annual A.A.T.C.C. meeting originally scheduled for October has been canceled.

Col. L. O. Grice, of the U. S. Army Quartermaster Corps, spoke at a meeting of the Southeastern Section of the A.A.T.C.C. held June 6 in Atlanta, Ga.

Discussion of an accelerated test to determine the amount of tendering of cotton fabrics dyed with sulphur colors was a feature of a meeting of the Piedmont Section, held in Charlotte, N. C., on June 20.

The Philadelphia Section held its annual outing on June 12 at the Manufacturers' Golf and Country Club, Oreland, Pa. On the same day the Midwestern Section held its outing at Lake Lawn, Delavan, Wis. The New York Section held its annual outing and golf tournament on June 19 at the North Jersey Country Club, Paterson, N. J.

Young Men's Textile Committee Cited

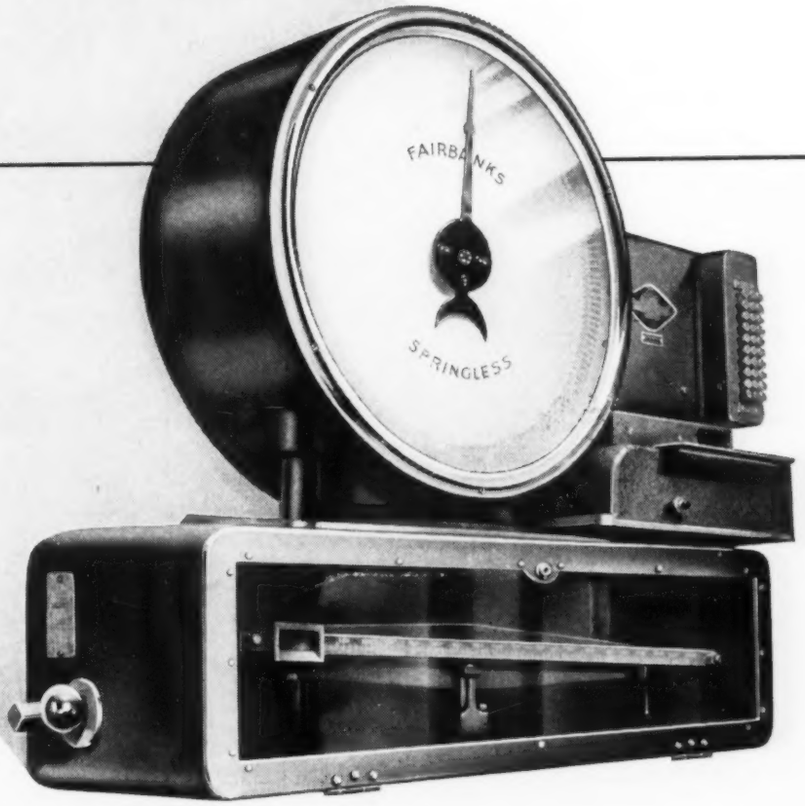
The textile committee of the Young Men's Board of Trade of New York was cited by that organization as the committee "which has performed outstanding service in the best interests of trade and commerce in the city of New York" at the annual meeting of the group at the Lawyers' Club, New York, last month. Edwin M. Walker, of the Peerless Woolen Mills, chairman of the committee, accepted the cup. George L. Farnsworth, of Chemical Bank & Trust Co., is now acting-chairman of the committee owing to Mr. Walker's impending military service. Mr. Farnsworth presented a report of the committee's work during the last year which listed twelve meetings, each addressed by recognized authorities from various divisions of the textile business. This textile committee is made up of 36 young men representing a cross-section of the textile industry in New York City. Four of these men are now in military service, and the program of the committee during the last year has been geared to the war effort.

This and That

Dim Out Sheer, a new black fabric recently introduced by Celanese Corp. of America, is designed to be placed between windows and the source of lighting; tests indicate that the use of this fabric in store windows eliminates passage of 75% of the light, but permits merchandise in the window to be viewed clearly.

A cotton overshoe for tire castings to preserve rubber and automobile tires will be announced soon by one of the larger tire companies, it is reported from Detroit. It is

THESE SCALES HELP UPSET THE AXIS TIMETABLE!



THE speed and accuracy of modern Fairbanks Scales, and their many ingenious applications, are helping rush war matériel production.

Use your priority to get Fairbanks weighing equipment that will not only save precious minutes now but also serve you best in years to come.

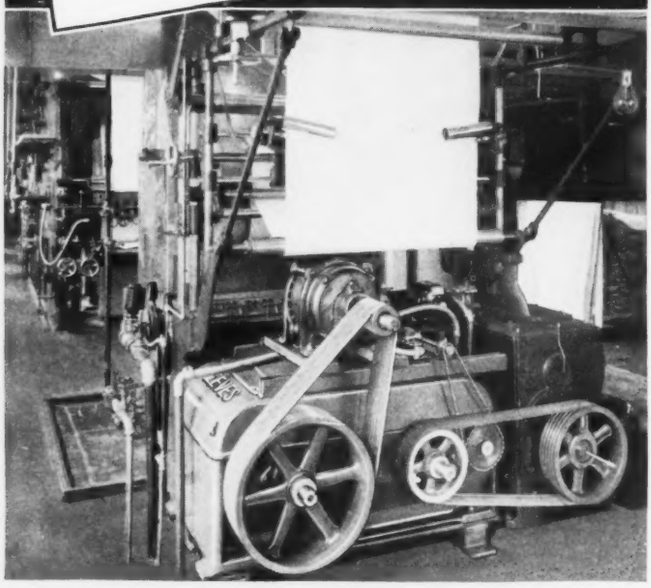
Fairbanks scale engineers are ready to help you plan for today with an eye for tomorrow. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago.

FAIRBANKS-MORSE

FAIRBANKS SCALES

SCALES
DIESELS
MOTORS
PUMPS

ANY CLOTH SPEED between 10 and 60 yds. per minute . . .



Means More Production for Our Armed Forces

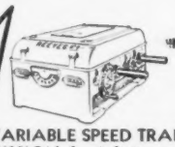
This Morrison Duplex Sanforizer, in a large North Carolina mill working on Government cloth, is equipped with an automatic remote control REEVES Transmission for full-range speed adjustability. Any required cloth speed from 10 to 60 yards per minute can be had by pushing a button.

In addition to this speed flexibility, the remote control automatically stops the Sanforizer in slow speed position—eliminating the dangers involved in starting machine from high, or running, speed position.

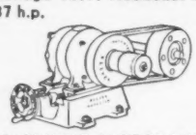
REEVES variable speed drives are standard equipment on many types and makes of textile machines, and are easily installed on machines in service. Catalog-Manual WG-419 will be sent on request.

REEVES PULLEY COMPANY
Columbus, Indiana

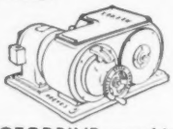
3 BASIC UNITS



VARIABLE SPEED TRANSMISSION for infinite speed control over wide range—2:1 through 16:1. Fractional to 87 h.p.



VARI-SPEED MOTOR PULLEY for application to shaft extension of any standard constant speed motor; 3:1 range. To 15 h.p.



MOTODRIVE—combines motor, variable speed drive and gear reducer (if needed). Speed range 2:1 through 6:1; to 10 h.p.

REEVES Speed Control

stated that the overshoe will last from 2,500 to 10,000 miles and that it contains no strategic materials.

A simplified practice recommendation for cotton jersey cloth and tubing for work gloves has been approved by the industry for promulgation, according to an announcement by the National Bureau of Standards; the recommendation, which is identified as R194-42, became effective on June 1 for new production.

A patent covering a process for stamping out garments from Nylon fabric has been assigned to E. I. du Pont de Nemours & Co. The method is said to eliminate seams and ridges and to result in garments having a better fit.

Nylon Fleece, a new fabric announced recently by Cohn-Hall-Marx Co., Inc., will be promoted on a national scale, according to A. Malvin, general manager of the company's yarn department. The material is said to have good thermal-insulating qualities and to resist penetration of rain and snow.

Pepperell Mfg. Co., Opelika, Ala., has had a training school established at the plant, under the supervision of the National Defense Training Corp. Courses in loom-fixing and weaving are being taught.

A bronze bust of former Governor B. B. Comer, who founded the Avondale Mills of Birmingham, Ala., was presented by the family at the invitation of trustees of the State Department of Archives and History, and recently unveiled in "Hall of Flags" in History Building at Tuscaloosa, Ala. Governor Frank Dixon accepted it from Donald Comer, chairman of board of Avondale Mills. The ceremonies of the presentation were presided over by Chief Justice Gardner.

The first crop of ramie from the Belle Glade prison farm, Tallahassee, Fla., has been successfully harvested and sold, it is reported by Nathan Mayo, State commissioner of agriculture. Eight acres at the farm produced 1,800 lb. of dried ramie fiber, selling for 25¢ a pound.

"Cush-o-Liner" is the name of a new product just put on the market by the Southern Mills, Atlanta, Ga. It consists of a piece of heavy cotton padding, cut on the bias to fit any size of automobile tire, and stoutly bound. When placed between an inner tube and a worn casing, it is said to add considerably to the life of the tire.

Working 163,436 man-hours without a loss of time accident in April, employes of the Linen Thread Co., Blue Mountain, Ala., won first position in the State-wide safety contest limited to spinning mills. Employes of Avondale Mills worked 1,136,743 man-hours in April without a lost time accident which won for them first place among weaving and spinning mills. Alabama textile mills worked 8,230,635¾ man hours in April with an accident record of 72 lost time injuries, 61 accidents being in weaving and spinning and 11 in mills limited to spinning. The accident frequency was 8.75, compared with 8.81 in 1941 and a national average of 7.77 in 1940.

Brown Durrell Co., Boston, Mass., one of Boston's oldest and largest wholesale knit goods houses, is this year marking its 70th anniversary in business.

Denier Club, New York, the social organization of sales representatives of the various rayon yarn producers, last month decided to call off its annual outing because of war conditions.

Because of demand for angora rabbit wool for lining mittens, helmets and socks for high-altitude flying and other war-time needs, the price for No. 1 grade has recently risen to $5.35 a pound, it is reported.

Chicago Drapery Manufacturers Association, of which E. F. Mansure is president, is sponsoring a dinner dance on

Make Things Last WITH PAINT

Structural materials are critical materials and are not replaceable. Patriotic and economic necessity demand that you protect them immediately—make them last with paint. This Handbook explains much that you should know about protecting structural material.

MAINTENANCE EXECUTIVES—

You need this HANDBOOK!

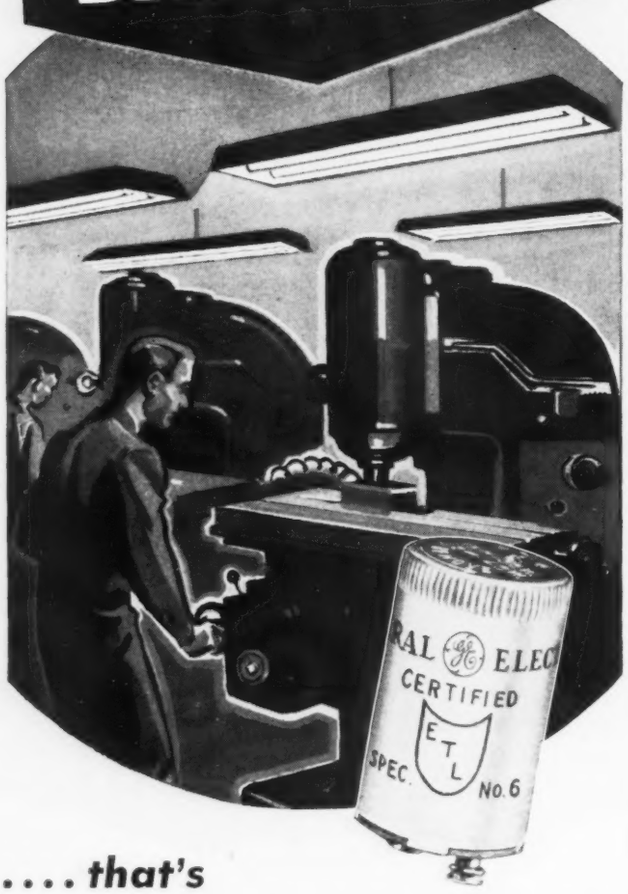
It simplifies your building maintenance problems. It tells you HOW—to harden cement floors—to rust-proof steel sash, tanks and structural work—to slip-proof floors and landings—to dust-proof cement floors and stairs—to acid-proof steel work—to protect and restore wood floors—to reduce sun glare—to waterproof new construction—and how to get efficient, economical solutions to many more maintenance problems.

You can Dip this House in Water
Protected with TRUSCON
Trade Mark Registered

***FREE**—to plant maintenance executives. Request must be written on business stationery to Dept. T-24.*

TRUSCON LABORATORIES
DETROIT • MICHIGAN

MAN-MADE DAYLIGHT?



.... that's

FLUORESCENT LIGHTING!

The rival of daylight—good fluorescent lighting—is the *new tool for production* that helps keep war plants operating every hour of every day. Yet it is economical lighting when you use G-E Fluorescent Starters. Economical because . . .

They help your lamps to last longer!

How? G-E Starters—designed by MAZDA Lamp engineers—start your fluorescent lamps at the *exact* proper time. There is no waste of lamp emission material (vital to long lamp life) when you use G-E Starters.

G-E "NO BLINK" STARTERS

You can eliminate the annoying blinking and flickering at end of normal lamp life and prolong the life of your starter by using the new G-E "No Blink" Starter, developed and introduced by General Electric.

Enthusiastic users everywhere say G-E Fluorescent Starters are superior for every fluorescent lighting installation.

HAVE YOU READ THIS FACT-PACKED FOLDER?

It's timely . . . helpful . . . and complete with new information on the need for proper accessories for your fluorescent lighting equipment. For your copy, write to Section G721-109, Appliance and Merchandise Department, General Electric Company, Bridgeport, Conn.

GENERAL ELECTRIC

July 9 in connection with the International Home Furnishing Market held at the Merchandise Mart from July 6 to July 18.

Textile Square Club of the City of New York will hold its annual outing at the Westchester Country Club on July 23. C. G. Haase is chairman of the outing, and Louis M. Davoll is co-chairman. Arrangements have been made for transportation so that every automobile going to the outing will be well filled.

Civilian Business Drags

Cotton goods trading through June dragged along with little activtiy. Uncertainties over possible inventory control proved a brake on operations of many buyers. The decline in raw cotton, which started in April and continued moderately during May, became a definite down trend in June when values had returned to about the basis current early in January. Although the lower cotton prices seemed to make the ceiling prices on fabrics more attractive in June, there was still very little evidence of pressure on the part of first hands to force the issue.

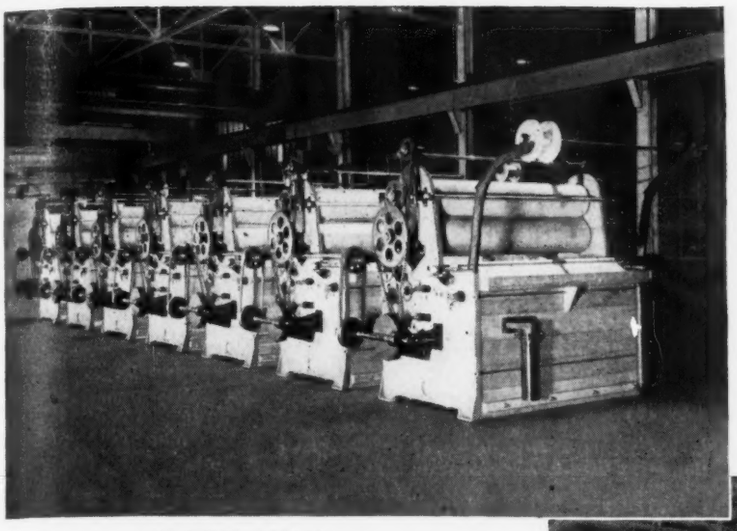
Wool goods manufacturers were not helped any by the temporary extension of the wool allotment plan for an additional month, since the third quarter of the year makes an important unit in the fall season on civilian goods and it is difficult to treat a fraction of that period as a producing unit by itself. The new 6-months plan to encourage blending of wool by offering a bonus will produce the desired effect, but the industry is glad to reach that end by a voluntary arrangement rather than by mandatory blending. Raw wool, which had declined during May, made a slight recovery during June.

Rayon fabric business at retail is reported generally satisfactory, but the retail store, in reducing its stocks, is holding up purchases from converting trades. In some quarters it is said that attractive offers had been made by first hands to stimulate business but that there is little buyer response. Rayon yarns available for civilian use will be further reduced as the production of high-tenacity yarn is increased, all of which goes into Government materials.

Hosiery sellers continue to make progress with their rayon numbers, and it is estimated that 90% of the full-fashioned production for the rest of the year will be of rayon, with about 10% of cotton. Total production of full-fashioned goods for 1942 is expected not to exceed 60% of normal output which means between 25 and 30 million dozen pairs compared with last year's 42 million dozen. Adequate rayon yarn is expected to be available through the end of the year, but beyond that it is problematic. A committee has been set up, headed by Irving J. Hessberg, of Van Raalte Co., to assist retailers in doing what is necessary to comply with the general maximum price regulations setting their March price as the present maximum.

Underwear manufacturers have recently offered nearby deliveries not only of underwear but such items as sweatshirts, fleeced coats and ribbed sweaters. These offerings contrast with the tightness of the market several weeks ago. Mills did not take early business for their complete producing period and since they have now completed earlier commitments they are able to offer additional production. Manufacturers are working on new constructions of men's and boys' knit shorts to take the place of the elastic webbing. Underwear mills are also experimenting with lines of knit pajamas.

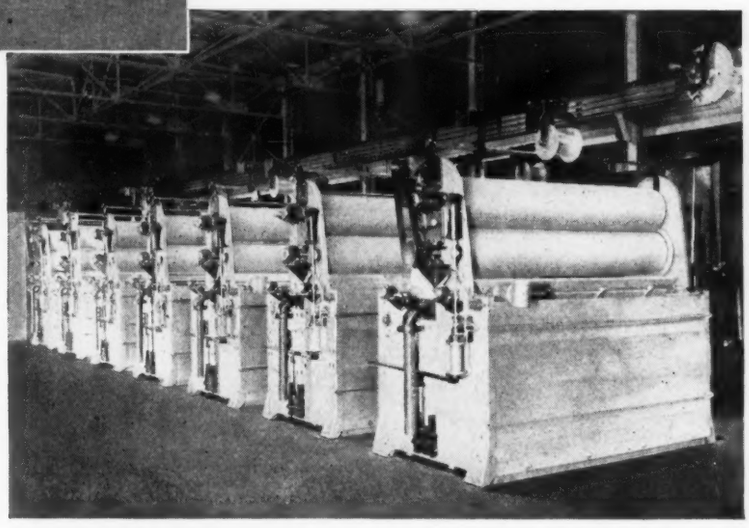
Outerwear mills are showing new lines of knitted suits and dresses. Three-color plaids are popular. Use of chenille yarns is producing attractive effects. In addition to such novelties there is a goodly part of each mill's line made up of staples, now designed for warmth and comfort.



FEED END

This is the CONTINUOUS WASHER FOR HIGH SPEED RANGE OPERATION

DELIVERY END



. . . Affords Scouring Speeds up to 45 Yards per Minute on Wide Range of Fabrics

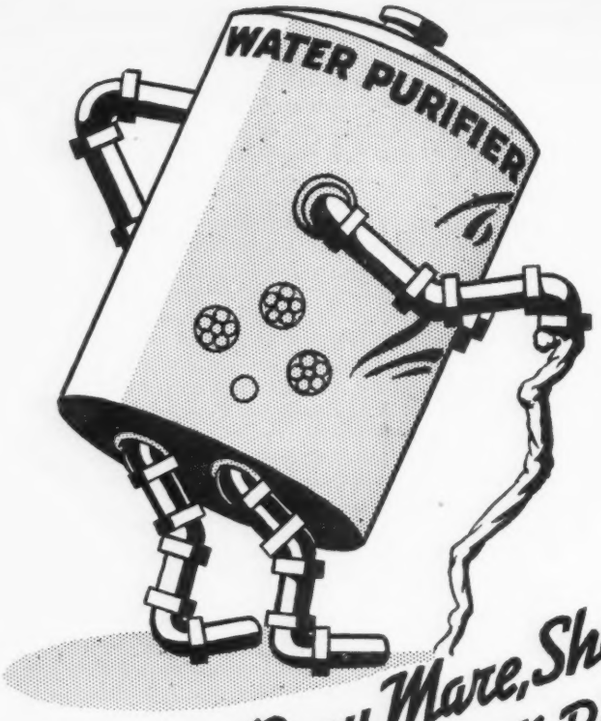
THE new Hunter Continuous Cloth Scouring Unit as illustrated above, differs from all other known continuous washers. It may be operated either as a continuous range or as seven individual Cloth Washers which may be used all at one time with seven or more different loads, or as few or as many bowls as may be required.

For complete details covering cost and savings, you are cordially invited to write to

JAMES HUNTER MACHINE COMPANY

FOUNDED 1847 • NORTH ADAMS, MASSACHUSETTS

Western Representative: **E. G. PAULES, 343 Bendix Bldg., Los Angeles, Calif.**



"The Old Gray Mare, She Ain't What She Used to Be"

Perhaps your water filtration or water softening plant has had too many birthdays to cope with the production schedules in force today . . . conditions that require maximum flow of clear, 100% soft iron-free water. You haven't the time and we cannot readily get all the materials necessary to replace with completely *new* equipment. But for many mills we have overcome operating difficulties with a

FREE INSPECTION and CHECK-UP SERVICE AND SUGGESTIONS.

Upon request and without cost to you, our local representative will examine your water softening or filtering equipment inside and out and give you a full report on its capacity, its mechanical condition and its present operating efficiency. You are not obligated in any way to purchase a dollar's worth of equipment or material even though his survey and recommendations result in definite operating economies. The time is short . . . write today to . . .

HUNGERFORD & TERRY, INC.

Mfgs. of Water Filters and Water Softeners

CLAYTON, NEW JERSEY

WATER PURIFICATION PLANTS

NEWS ABOUT MEN

Henry Rose, New York City, has been appointed Chief of the Textile, Clothing and Leather Goods Branch of WPB. He succeeds **Ben Alexander,** who has been Acting Chief of the Branch and who now resumes his duties as Assistant Chief of the Bureau of Industry Operations of the WPB. Mr. Alexander will continue to be connected with the Textile Branch in a supervisory capacity. Mr. Rose has been president and director of the Henry Rose Stores, Inc., which operates women's and children's outerwear apparel departments in some Sears, Roebuck & Co. stores.

Henry Rose

Franklin W. Hobbs, president of Arlington Mills, Boston, has been again designated a director of the Textile Foundation by President Roosevelt.

Edward N. Brower, secretary-treasurer Rockfish Mills, Hope Mills, N. C., has been loaned to WPB at Washington as a dollar-a-year man. He will be consultant on carded yarns and will assist in the procurement of carded yarn for vital war industries.

Caldwell Ragan, Gastonia, N. C., president of Ragan Spinning Co., has been sworn in as unit chief of the combed yarn division of the War Production Board.

Horace G. Woodbury, manufacturing agent of Wamsutta Mills, New Bedford, Mass., was recently appointed in charge of combed yarn goods on WPB, to succeed **George E. Westberg,** made chairman of the textile joint procurement committee, Division of Purchases.

H. J. Ball, professor of textile engineering at the Lowell (Mass.) Textile Institute, was elected president of the American Society for Testing Materials at its 45th annual meeting in Atlantic City, N. J., June 22 to 26. Prof. Ball was graduated from M.I.T. in 1906 and joined the Lowell faculty in that same year.

Prof. H. J. Ball

P. E. Glenn, former executive of Exposition Mills, Atlanta, who retired to his farm in Madison County in 1939, is a candidate for the Georgia State Senate from the Thirtieth Senatorial District.

James E. MacDougall, formerly southern representative for Smith Drum & Co., was named district manager for the War Production Board in North Carolina and South Carolina.

J. J. Mills is now processing engineer in the development department of the Textile Division of U. S. Rubber Co., Hogansville, Ga. He was formerly engineer for Saco-Lowell Shops, Boston, Mass.

Francis E. Madden, textile agent at Boston, Mass., and a trustee of Lowell Textile Institute, has been appointed regional price executive in charge of textiles, leather and apparel at the OPA Office in Boston. He succeeds **Richard Freeman,** formerly of Pepperell Mfg. Co., who resigned to accept a lieutenant's commission in the Navy.

Charles F. McNally will join the credit department of Meinhard, Greeff & Co., Inc., New York, in charge of men's wear and yarn accounts on July 1. Mr. McNally has been with Commercial Factors Corp. for 15 years.

E. C. Dale, formerly sales manager for the mercerized yarn division of Aberfoyle Mfg. Co. of Philadelphia, is now associated with the Philadelphia office of Sauquoit Silk Co.

John F. Devine, general sales manager, of Wornock Mills, New York, has been ap-

Is Your Mill

"WARP WISE?"

You are if you're using

NALEX

(formerly AMYLEX)

The Quick-Cooking, Slow-Congealing Starch Product Made Exclusively for Cotton Warp Sizing.

- ***For Better Warps***

  Strong Film Forming
  Good Penetration
  Smooth Yarn Surfaces

- ***For Defense***

  Saves Tallow
  Speeds Production
  Conserves Labor & Material

NALEX is particularly recommended for fine yarns and fabrics.

NATIONAL STARCH PRODUCTS Inc.

820 GREENWICH STREET, NEW YORK

How The Solvay Sales Force Is Helping The War Production Program

Like many another manufacturer, we shifted to a war time production basis almost overnight. As a part of this program it has been necessary to curtail our sales solicitation in order to use some of our salesmen for other duties.

Other Solvay salesmen have taken over the work of those men who have been transferred. In addition, sales calls of Solvay salesmen have been "pooled" wherever possible in order that more territory can be covered with limited use of automobiles.

Perhaps, for the time being, a "new" Solvay face will be making sales contacts in your district. You can rest assured that this man knows his business . . . that he will try to be of utmost help in solving your problems.

In return for the extra hours these men are now putting in, would you try to make your Solvay salesmen's calls as effective as possible—to your advantage and to his—by promptly giving him the time he needs . . . even thinking ahead of time how you and he can work best together to save just a little more time for some other customer's problem?

★ ★ ★

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET NEW YORK, N. Y.

BRANCH SALES OFFICES:

Boston · Charlotte · Chicago · Cincinnati · Cleveland · Detroit
New Orleans · New York · Philadelphia · Pittsburgh · St. Louis · Syracuse

pointed senior industrial advisor with WPB, Washington.

Charles Pray, of Pray & Reilly, New York, observed the 40th anniversary of his entering the cotton cloth brokerage business on June 2.

R. M. Samford has resigned as assistant director of the Virginia State Planning Board to join the engineering department of Celanese Corp. of America, Narrows, Va.

J. E. Sirrine, textile engineer, Greenville, S. C., and **Dr. W. P. Jacobs,** executive vice-president of the South Carolina Cotton Manufacturers Association, Clinton, S. C., have been named to the advisory board of the Regional Office of WPB at Atlanta, Ga.

Clarence B. Shoemaker, plant manager of American Viscose Corp's. plant at Nitro, W. Va., assumed the duties of assistant manufacturing manager of the corporation at its head office in Wilmington, Del., June 15. Mr. Shoemaker joined the company in 1919. **J. F. Murrin,** viscose department assistant to the manufacturing manager at Wilmington, has become plant manager at Nitro.

G. T. Cooper, Martinsville, Va., in charge of employment at the Nylon plant of E. I. duPont de Nemours & Co., and **Robert W. Seitz,** training supervisor at the plant, have been transferred to Delaware, where Cooper is in the company's engineering department and Seitz is training supervisor at the explosives division. **W. P. Randolph,** chief timekeeper, succeeded Cooper, and **George Fort** succeeded Seitz.

W. Harold Smith, who has been connected with the cotton spinning laboratory of the United States Government for several years; has accepted a position with the University of Texas where he is in charge of all textile research.

W. K. Dana of Saco-Lowell Shops, formerly assistant superintendent of Laurens Cotton Mills, has gone to Washington as assistant to **R. S. Dempsey,** head of the Textile Machinery Division of WPB. Mr. Dana is the son of **Philip Dana,** treasurer of Dana Warp Mills, Westbrook, Maine.

Miss Winifred M. Pardy, a graduate of New Bedford Textile School and lately employed as laboratory technician by the West Warwick (R. I.) Mills, has joined the A. M. Tenney Associates, Inc., New York.

Moe Aronsohn, formerly sales manager of Empire Piece Dye Works, has joined the sales staff of the Vermoral Dyeing Co., Paterson, N. J.

Edward V. Carroll

Edward V. Carroll, in charge of the Engineering Department of Bradford Durfee Textile School, Fall River, Mass., has been appointed principal of that school to succeed **Henry W. Nichols,** who retires July 1. Mr. Carroll was born in Fall River on April 1, 1899. He was graduated from M.I.T. in 1920. He joined the faculty of Bradford Durfee in 1921 and became head of the Engineering Department in 1931.

William W. Carman, Jr., for many years assistant chief of the Textile Division of the Dept. of Commerce and more recently that department's industrial consultant in charge of textiles and allied products, has left the government's service and is establishing his own business in Washington as consultant and business counselor. Prior to his government connection, Mr. Carman was with J. P. Stevens & Co., Lynchburg Cotton Mill and Merrimac Woolen Corp.

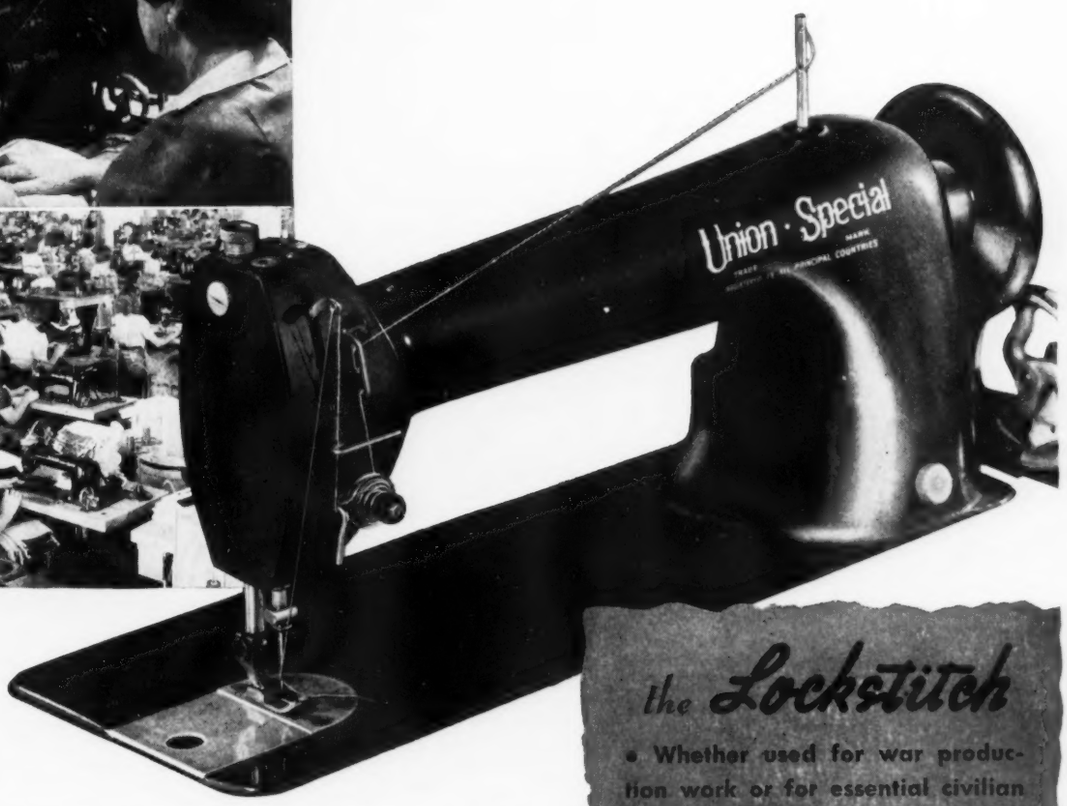
Walter Barker, New Bedford Rayon Co., has been elected president of the New England Rayon Yarn Peddlers Association. **Walter Mansfield,** Celanese Corp., and **Henry G. Buckley,** E. I. duPont de Nemours Co., were elected vice-president and secretary-treasurer, respectively.

Henry Barrett, formerly manager of Penmans, Ltd., Paris, Ontario, was recently elected President of the Dominion Woolens & Worsted, Ltd., with head office in Peterborough, Ont. He was formerly vice-president and general manager. **John W. Hobbs,** formerly president, becomes chairman of the board.

Chester A. Boynton, of East Providence, has been made assistant treasurer of Felters Co., Boston, with mills at Millbury, Mass., Johnson City, N.Y., and Jackson, Mich.

Francis X. Minich, former purchasing agent of Pen-

ANSWERING THE CALL FOR SPEED!



THE kind of speed needed today is PRODUCTION SPEED. It is attained by having *equipment* that stands up under the strain of gruelling, high speed runs . . . equipment that is easy to operate . . . that produces a quality of work that minimizes rejections . . . that is especially designed to do the job! UNION SPECIAL PRODUCES THIS KIND OF EQUIPMENT — *for all industrial sewing requirements.* We are always glad to make recommendations. UNION SPECIAL MACHINE CO., 132 North Franklin St., Chicago, Illinois.

the Lockstitch

• Whether used for war production work or for essential civilian supplies, the Union Special Lockstitch, *Style 61300 C*, is a favorite with operators and owners, alike! This machine has the same feeding mechanism that is used in finest special machines in the Union Special line, plus numerous exclusive design features which enable it to set a new standard for performance on all kinds of single needle plain seaming work.

UNION SPECIAL

World's Largest Exclusive Builder of Industrial Sewing Machines

The
SEPTEMBER
Issue of
TEXTILE WORLD
will be the
18th ANNUAL
RAYON
YEAR BOOK
NUMBER

•

Advertiser's Note:— None too soon to start preparation of Special Copy . . . Right?

NEWS ABOUT MEN

dleton Mfg. Co., LaFrance, S. C., has become comptroller and assistant secretary of the Gardiner-Warring Co., Florence, Ala.

Goldthwaite H. Dorr, chairman of the board of Cotton-Textile Institute, New York, has resigned to devote his full time to his duties as representative of the War Department on the War Manpower Commission. Mr. Dorr began his association with the institute in 1927 as legal counsel. He served as president in 1935 from the resignation of **George A. Sloan** until the appointment of **Dr. Claudius T. Murchison.**

Floyd W. Jefferson, Jr., connected with the firm since 1934, has been made partner in Iselin-Jefferson Co., New York.

Wm. H. Spann, who was the first mechanic to be employed in the rayon industry in the United States, has just celebrated his 32nd anniversary with the American Viscose Corp., now chief engineer of the corporation's sales development department and textile unit at Marcus Hook, Pa.

Miss Opal Johnston, who has been inspector in the cloth room of Unit No. 1 of Jefferson (Ga.) Mills, has been promoted to timekeeper. She is the daughter of Earnest A. Johnston, cardroom overseer.

C. P. Taylor, formerly credit manager of Atlanta branch office of Bigelow-Sanford Carpet Co., is now connected with the factoring division of the Trust Co. of Georgia, Atlanta, Ga. This division is in charge of **J. C. Osborne.**

Everett R. Cook, senior partner of Cook & Co., Memphis, Tenn., has been named a vice-president of the Commodity Credit Corp., Washington, D. C., in charge of foreign purchases.

Stephen Walser, of Walser & Wellisch Co., textile brokers, New York, has withdrawn from the firm to join the rayon division of the OPA, Washington, D. C.

Joseph Whalley, Jr., formerly general superintendent of Hathaway Mfg. Co., New Bedford, Mass., has been appointed superintendent of weaving at Greenhalgh Mills, Pawtucket, R. I. Recently Mr. Whalley has been doing special textile inspection for the U. S. Army at the Jeffersonville, Ind., depot of Quartermaster Corps.

W. M. Carlisle, formerly with the Riverside unit of Gossett Mills, Anderson, S. C., has become superintendent of Gossett Mills, Pendleton, S. C.

Sherman Monroe

Sherman Monroe has recently joined Martin Weiner, New York, to direct a complete new research and testing laboratory. Since 1929 Mr. Monroe has been associated with the Better Fabrics Testing Bureau in charge of fabric and fiber research, for the last ten years, director of laboratory.

John Warlick, superintendent of Falls Mfg. Co., Granite Falls, N. C., has been elected mayor of that city.

George P. Findlay, assistant superintendent of Crompton & Knowles Loom Works, at Worcester, Mass., was recently tendered a dinner by fellow associates. He is planning to retire, after 48 years' service with the company.

Raymond H. Case has become superintendent of Nashawena Mills, New Bedford, succeeding **Andrew H. Macy,** elected treasurer. Mr. Case was superintendent of mills headed by R. Johnston, Monroe, N. C.

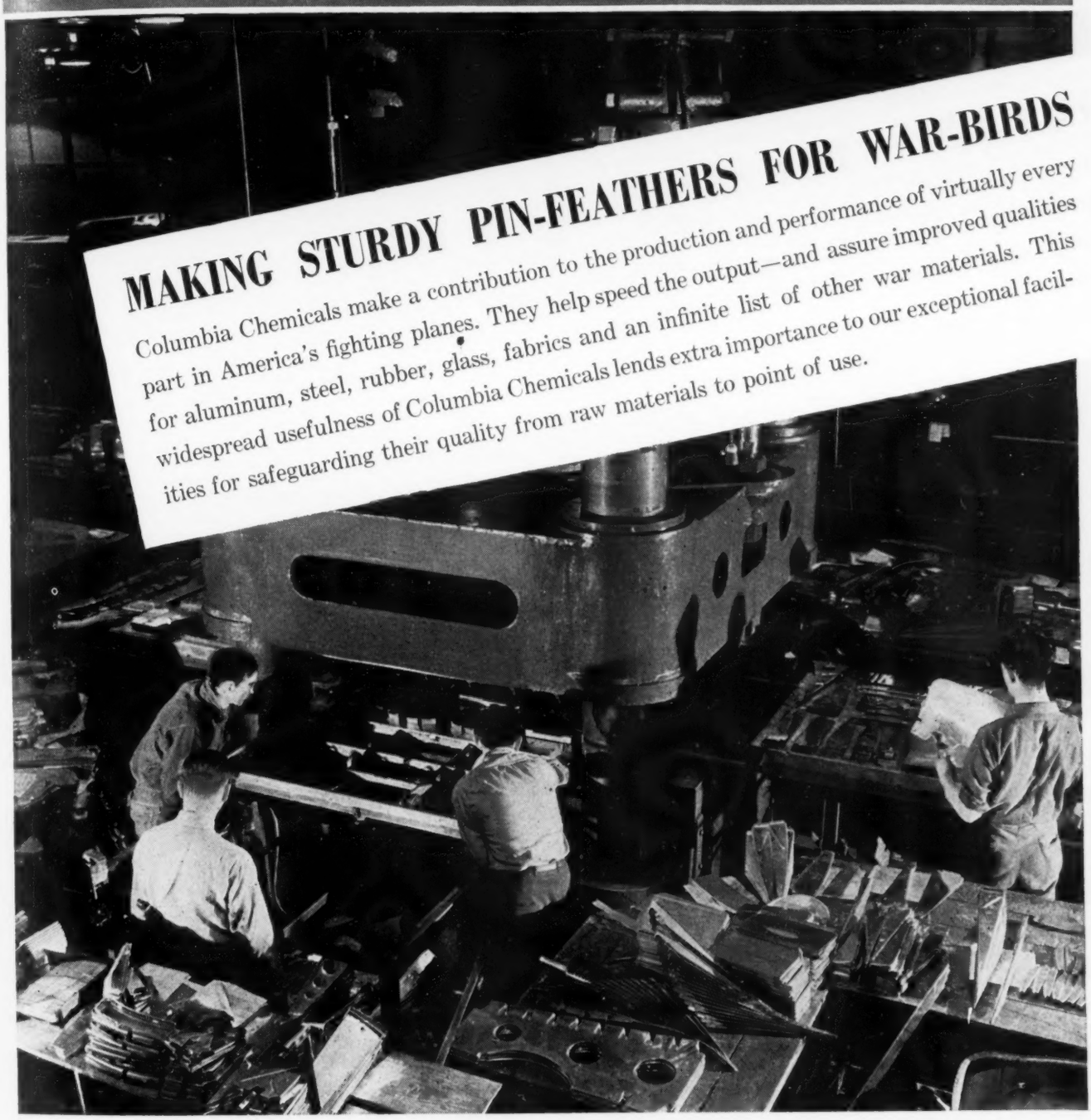
L. E. Parsons has relinquished his duties with the E. I. du Pont de Nemours & Co., Old Hickory, Tenn., and is now acting head of the department of textile engineering at the Texas Technological College, Lubbock, Tex., in the absence of **Cash Stanley,** who has been called into active duty as an officer in the army.

Raymond H. Chase has resigned as superintendent of the two mills of Johnson Mills, Monroe, N. C., and has accepted position of superintendent of Nashawena Mills, New Bedford, Mass.

J. M. Gaston has resigned as assistant superintendent of Bradley Mfg. Co., Columbus, Ga., and has accepted a position as spinner at Eagle & Phenix Mills.

M. D. Vaughn has become office manager of Cetwick Silk Mills, a subsidiary of Burlington Mills Corp., Asheboro, N. C. He was formerly office manager of Reidsville (N. C.) Throwing Co.

COLUMBIA CHEMICALS



MAKING STURDY PIN-FEATHERS FOR WAR-BIRDS

Columbia Chemicals make a contribution to the production and performance of virtually every part in America's fighting planes. They help speed the output—and assure improved qualities for aluminum, steel, rubber, glass, fabrics and an infinite list of other war materials. This widespread usefulness of Columbia Chemicals lends extra importance to our exceptional facilities for safeguarding their quality from raw materials to point of use.

ESSENTIAL INDUSTRIAL CHEMICALS

SODA ASH • CAUSTIC SODA • SODIUM BICARBONATE • LIQUID CHLORINE • SILENE* CALCIUM CHLORIDE • SODA BRIQUETTES MODIFIED SODAS • CAUSTIC ASH • PHOSFLAKE CALCENE** • CALCIUM HYPOCHLORITE

*Precipitated Calcium Silicate **Precipitated Calcium Carbonate

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY

COLUMBIA CHEMICAL DIVISION

30 ROCKEFELLER PLAZA, NEW YORK, N.Y.

CHICAGO • BOSTON • ST. LOUIS • PITTSBURGH • CINCINNATI

CLEVELAND • MINNEAPOLIS • PHILADELPHIA • CHARLOTTE

FEDERAL SPECIFICATIONS *call for* ATLAS-OMETERS

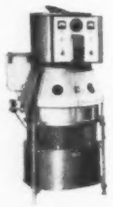
● Atlas-Ometers are the original, accelerated testing machines which must be used to comply with many Federal Specifications.

LAUNDER-OMETER
—for accelerated washing tests

Standard laboratory washing machines of the A.A.T.C.C.—measures resistance to washing action, shrinking, staining, color fastness to soaps and solvents. All factors, including washing action, carefully controlled—can be reproduced exactly at any time.

FADE-OMETER—*for accelerated fading tests*

Rotates specimens around the Atlas Enclosed Violet Carbon Arc, the closest approach to natural sunlight. Temperature automatically controlled.

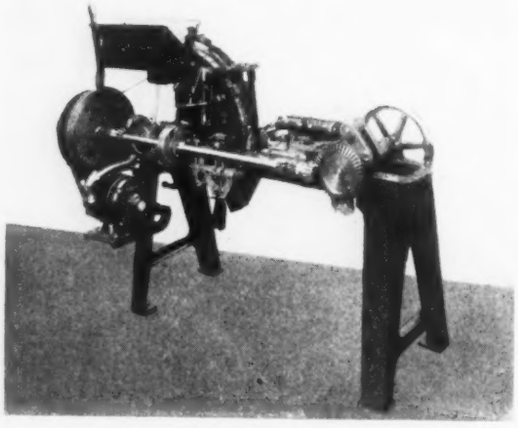


WEATHER-OMETER
—for accelerated weathering tests

Duplicates effect of actual exposure—months of sun, rain, heat, and cold condensed to a few days.

ATLAS ELECTRIC DEVICES COMPANY
371 W. Superior Street, Chicago, Illinois

ATLAS-OMETERS *Scientific Testing Equipment*
FADE-OMETER • LAUNDER-OMETER • WEATHER-OMETER



THE TYPE K BOBBIN STRIPPER

HIGH CLEANING CAPACITY
Protects barrel and finish Usually pays for itself in one year—always within 18 months

Complete information promptly furnished upon request

The Terrell Machine Co., *Inc.*
CHARLOTTE, N. C.

W. J. Westaway Co., Ltd. . . . Hamilton and Montreal, Canada
James F. Notman . . . . . Needham, Mass.—N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J.—Penn., N. J. and N. Y.
Geo. Thomas & Co. . . . . Manchester, Eng.—European Agt.

Textile Men in Armed Services

Christopher C. Baldwin, of Woodward Baldwin & Co., New York, who has lately been attached to the Quartermaster General's office in Washington as a civilian, has been commissioned a major.

Gideon J. Frankil, formerly general manager of the Union Knitting Mills, Philadelphia, has been commissioned a lieutenant in the Army and joined the QM Corps at Kilborne, La. He was graduated from the Philadelphia Textile School in 1936.

J. Cal Harris, of Deering, Milliken & Co., New York, who has been attached to the Army Quartermaster Headquarters in Washington in a civilian capacity, has been commissioned captain.

Robert W. Johnson, president of Johnson & Johnson, of which Chicopee Mfg. Co., Gainesville, Ga., is a unit, has been appointed a colonel in the United States Army in the Ordnance department and has been made a deputy to General Hardee in the production of all ammunition.

Don McLeod, manager of men's and boys' department of Munsingwear, Inc., Minneapolis, Minn., has been ordered to report for duty as captain in the Quartermaster Corps. He served as a lieutenant in the first World War. He has been with Munsingwear for 21 years.

Marshall K. Hunter, vice-president, Trust Co. of Georgia, Atlanta, Ga., and in charge of the Factoring Division, is now assigned to the Finance Division, U. S. Army, at Fort Benjamin Harrison, Indianapolis, Ind., with the rank of captain.

David C. Scott, Jr., assistant treasurer of Henry L. Scott Co., Providence, R. I., has been commissioned lieutenant (J. G.) in the Navy and is stationed at Fort Schuyler, New York.

Louis R. Thun, assistant treasurer of Textile Machine Works, Reading, Pa., has has joined the Army Air Corps with the rank of Second Lieutenant, and reported for duty on June 3 at Scott Field.

James H. Bulkley, formerly of Mooresville (N. C.) Cotton Mills is now a second lieutenant in the 54th Quartermaster Regiment at Fort Bragg, N. C.

John Porterfield, of Southeastern Cottons, Inc., New York, was inducted into the army last month.

Robert A. Poisson, for the last eight years with Pepperell Mfg. Co., New York, has been commissioned lieutenant senior grade in the Navy and assigned to a training period in the Naval Station at Quonsett Point, R. I.

Allan Emery, Jr., of Emery & Conant Co., Boston, Mass. is now a member of the Coast Guard. **Frank S. Watson,** 2nd, also of Emery & Conant Co., Boston, Mass., is in the Navy and was assigned to the Torpedo Station at Newport, R. I.

Paul T. Biggers, who has been research associate on the warp-sizing research project now being conducted at University of Texas under the sponsorship of the Textile Research Institute, has been commissioned as an ensign in the United States Naval Reserves.

Paul Basser Seydel, of Seydel-Woolley & Co., Atlanta, Ga., manufacturers of textile chemicals, is now serving as a lieutenant in the Chemical Warfare Service of U. S. Army, and is stationed near Tampa, Fla.

Major Herman C. Kliber, executive officer in the Procurement Department, Philadelphia QM Depot, has been promoted to lieutenant-colonel.

George C. Cramer, treasurer of Cramerton, N. C., Mills, who is now serving in the Army, has been promoted to captain in War Plans Division of the Air Corps.

Robert A. Morgan, president of Morgan Mills, Rome, Ga., and textile engineer, has become manager of the army ordnance plant at Jacksonville, Ala.

George M. Wright, Jr., superintendent of plants No. 1 and No. 2 of Republic Cotton Mills, Great Falls, S. C., has entered the armed services of his country.

Robert T. Kain, sales engineer in the belting department of Industrial Products sales division of B. F. Goodrich Co. has resigned to enter the service of the United States Navy where he has been commissioned lieutenant, junior grade. He is an Annapolis graduate class of 1921.

J. Welch Harriss, president of Harriss & Covington Hosiery Mills, High Point,

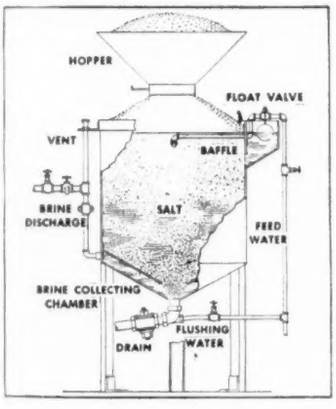
HAVE YOUR CHLORINE AND SAVE MONEY, TOO!

Be glad you've got to give up commercial chlorine so that our arsenals can have all they need. Winning the war is point No. 1 in our program today! Carrying on efficiently on the home front is point No. 2. In *your* field . . . the Lixate Process can help you pour it on for victory.

When hooked to a Chlorinator, the Lixator which makes pure, fully saturated brine will give *you* all the chlorine you need . . . *and* . . . step up the efficiency of your water softener, too! Here are the facts . . .

How the Lixator Increases Efficiency of Laundry Chlorinators—(Cells for making hypochlorite bleach)—Utilizing salt and water, a chlorinator produces laundry bleach by electrolysis. However, in this process, the impurities in ordinary brine and in the salt dissolution water, react slowly on the graphite electrodes and eat them away. Further, suspended dirt and insoluble matter coat the electrodes with mud—interfere with the electrolysis. By using *clean, pure* Lixate Brine of controlled density in place of ordinary brine—these troubles are eliminated. In addition, the Lixator cuts costs by using economical Sterling Rock Salt in place of evaporated salt.

The Lixator's "Plus"—Zeolite Water Softener Regeneration—Lixate Brine is also ideal for the automatic regeneration of zeolite. It is crystal clear, because it is free of insolubles. In action, the brine releases calcium and magnesium salts from the zeolite, carries them away and leaves the water softener as efficient as before!



How the Lixate Process Works

International's Sterling Rock Salt is placed in the hopper and flows by gravity into the Lixator below. Water enters through the spray-nozzle at top, dissolves the salt without agitation, and becomes crystal-clear, fully-saturated brine. The brine is self-filtered, then rises in collecting chamber to discharge pipe. Repeated tests have shown that this Lixate Brine is just as chemically pure as brine made by mixing water with salt that is 99.63% pure!

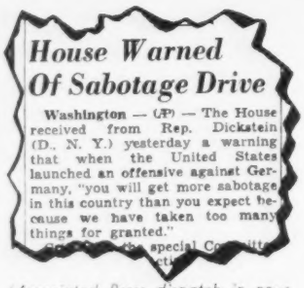
THE LIXATE PROCESS CUTS OPERATING COSTS 5 WAYS!

1. No labor cost for making brine.
2. Users report savings of 10% to 20% in amount of salt required.
3. Lower cost for handling salt and brine in plant.
4. Fewer replacements of worn-out electrodes.
5. Eliminates labor cost for scraping mud from electrodes.

FREE CONSULTATION! *Write to International Salt Co., Inc., for a free consultation with an International Field Engineer. He'll give you the facts and figures—complete details on what the Lixator can do for your plant. In addition, he'll be glad to recommend the Lixator installation best suited for operation with your Chlorinator.*

The LIXATE *Process*
Reg. U. S. Pat. Off.
for making brine

INTERNATIONAL SALT COMPANY, INC., DEPT. T-7, SCRANTON, PENNSYLVANIA


House Warned Of Sabotage Drive

Washington — (AP) — The House received from Rep. Dickstein (D., N. Y.) yesterday a warning that when the United States launched an offensive against Germany, "you will get more sabotage in this country than you expect because we have taken too many things for granted."

(Associated Press dispatch in newspapers of May 1, 1942)

IT IS HAPPENING HERE

ONE ENEMY AGENT inside a war textile plant or other restricted area can quickly destroy the productivity of thousands of loyal American workers.

KEEP HIM OUT of Your organization with

MARFUL Identification

. . . makes badges and file pictures for LESS THAN ONE-HALF CENT each, and passes for LESS THAN 2 CENTS each . . . all, right inside YOUR own plant . . . under YOUR own supervision and control . . . NO NEGATIVES TO PROCESS . . . NO EXPERT OPERATOR REQUIRED.

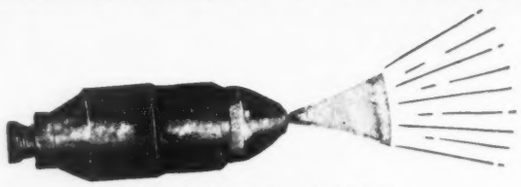
Distributed exclusively by

MARKS & FULLER, Inc., Rochester, N. Y.

Established 1860. Over 80 Years in the "Kodak City"

WRITE US ABOUT YOUR IDENTIFICATION PROBLEM

THE CAPACITY DOUBLER



RIHCO TYPE B ATOMIZER

Humidifying capacity can be increased 100% with the same compressor and with no increase of power cost when the RIHCO Type B is adopted. Why? Because this ingeniously-engineered atomizer puts every atom of air to work.

Or, if you wish to install a new system of humidification, you can adopt the RIHCO Type B to cut power costs in half, because this atomizer requires a compressor only half the size of the ones usually employed.

Long life, low maintenance, and trouble-free operation. BE RIGHT WITH RIHCO.

R. I. Humidifier & Vent. Co.

Humidifiers since 1912

99 CHAUNCY ST., BOSTON, MASS.

Aldrich Machine Works, Greenwood, S. C.

V. L. Sanderson, 1710 Walnut St., Philadelphia, Pa.

Canadian Textile Engineering, Ltd., Montreal, Quebec

N. C., has joined the United States Navy Reserve, and left on June 20, for training at the Naval Air Station, Quonset Point, Rhode Island.

James H. Kennedy, Jr., assistant professor in wool department of Lowell Textile Institute, has joined the U. S. Army with the commission of lieutenant in Quartermaster Corps. Lieutenant Kennedy is now stationed at Philadelphia Quartermaster Depot.

George L. Storm, manager of the acetate sales division of American Viscose Corp's. New York office, has received a commission as lieutenant, Senior Grade, in the Navy, and is reporting for duty on July 29. **Allen H. Jones,** of the company's Economics and Statistics Department, New York, received his commission last week as ensign in the U. S. Coast Guard.

Jack L. Chivington, superintendent of the Davenport Silk Mills, Chattanooga, Tenn., who recently accepted a commission as ensign in the United States Navy, has reported for active duty at Boston.

R. S. Bush, for two seasons manager of the successful Callaway Towel Salon, Miami Beach, Fla., has received his commission as Lieutenant (JG) in the Navy. He will be a Deck Volunteer Specialist attached to the Miami Headquarters, and in all probability travel throughout Florida to stimulate recruiting. **William S. Forshaw,** former assistant in the Callaway advertising and publicity department has been appointed Research Librarian of the Public Relations Department of the Air Corps, Washington, D. C.

Eddie E. Jones, Jr., who has been connected with the office of Johnston Mills, Charlotte, N. C., at Chattanooga, Tenn., has entered the army and is now located at the Olympia (Wash.) Air Base.

Alex Hanes, Jr., associated with American Viscose Co., at its Charlotte, N. C., office, has entered the army and will be given cavalry training at Fort Reilly, Kan.

Woods Huff, assistant general manager and treasurer of Rockwood (Tenn.) Hosiery Mills, has been commissioned a second lieutenant in the Army engineers, division of chemical warfare, and has been in Washington, D. C.

John P. Carter, Jr., secretary of the Appalachian Mills Co., Knoxville, Tenn., has been commissioned a lieutenant in the U. S. Navy Reserve and left on June 13 for training duty at South Boston, Mass.

Milton Croom, chemist for Springs Cotton Mills, Fort Mill, S. C., has resigned to become a lieutenant (JG) in the U. S. Navy.

Obituary

J. Irvine Lyle, 68, president of Carrier Corp., Syracuse, N. Y., and one of its founders, died June 7. In 1902 Mr. Lyle collaborated with Dr. Willis H. Carrier, now chairman of the board of Carrier Corp., in developing the first scientific air-conditioning system. Some years later Mr. Lyle, along with Dr. Carrier and other associates, organized Carrier Engineering Corp., of which Mr. Lyle served as general manager and treasurer. The company in 1930 became Carrier Corp. with Mr. Lyle as president.

Addison L. Green, 80, former chairman of the board of Farr Alpaca Co., Holyoke, Mass., died in that city on June 24. He was a native of Westfield, Mass., and was at one time a vice-president of the National Association of Wool Manufacturers.

Milton K. Yorks, 54, president of Bloomsburg (Pa.) Silk Mills for the last 15 years, died June 22. He had been with the company all his business life, coming into control on the death of his father in 1917. He was for many years a director of the National Federation of Textiles.

Fred Nichols, 62, for the last 15 years on the sales force of Pepperell Mfg. Co., New York, and previously for 18 years with the old firm of Bliss, Fabyan & Co., died last month.

Eugene Robert Alderman, 58, president of Alderman Top Co., Holyoke, Mass., and former superintendent of Farr Alpaca Mills, died June 12. He joined the Farr Alpaca Co. at the age of 14 and served in many capacities over a span of 38 years. In 1917, he became general superintendent, a position he held until the concern was liquidated in 1936. In 1939 he organized the Alderman Top Co. which has func-

Announcing

FULL-SCALE PRODUCTION OF HERCULES SYNTHETIC PINE OIL

New Source Overcomes Shortage

Here's good news for all users of Pine Oil. Hercules Synthetic Pine Oil is now in volume production, and prices have been reduced to an attractive figure. We believe we have enough for everybody.

Steadily increasing commercial use indicates that Hercules Synthetic Pine Oil can be used in most operations where the beneficial effects of pine oil are desired. You will see from a comparison of the tables that this new synthetic material is made to an analysis that closely approximates Yarmor 302-W. You can readily determine by test whether it is suitable for your process, and if so, augment your present supplies from this new source. Write for a sample.

TYPICAL ANALYSIS—YARMOR 302-W

Specific Gravity @ 15.6/17.6°C.	0.9214
Refractive Index @ 20.0°C.	1.4792
Unpolymerized Residue	0.4%
Specific Rotation	+5.2°
Moisture	0.2%
Freezing Point	below −10.0°C.
Flash Point	166.0°F.
Color—Lovibond 500 Amber Series	3.0

A. S. T. M. Distillation Range:

5%	198.2°C.
30	205.2
50	210.2
70	215.2
95	222.2

TYPICAL ANALYSIS HERCULES SYNTHETIC PINE OIL

Specific Gravity @ 15.6/15.6°C.	0.9180
Refractive Index @ 20.0°C.	1.4815
Unpolymerized Residue	0.4%
Specific Rotation	+4.0°
Moisture	0.25%
Freezing Point	below −10.0°C.
Flash Point	150.0°F.
Color—Lovibond 500 Amber Series	1.25
200 Red Series	0.25

A. S. T. M. Distillation Range:

5%	196.0°C.
30	204.0
50	210.0
70	216.0
95	222.0

Naval Stores Department

HERCULES POWDER COMPANY

INCORPORATED

994 MARKET STREET • WILMINGTON, DELAWARE

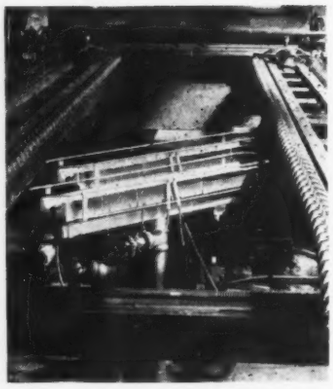
QQ-97

Increase Production

2 to 5 times!

with present

Drying Equipment



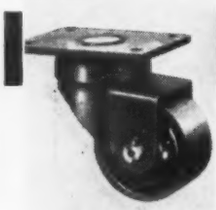
One typical mill stepped up drying from 40 to 120 yds. per minute with a Red-Ray unit.

Red-Ray Textile Drying Units not only increase production but *improve the quality* of the finished product. You can apply the Red-Ray Drying Unit to every process where heat is required—at only a fraction of the cost of additional machinery. No added manpower.

• Write for data—let us give you the answer to your problems—at once.

RED-RAY MFG. COMPANY

445 W. 45th St. New York, N. Y.



Reduce Costs with

DARNELL CASTERS

& E-Z ROLL WHEELS

Reduce Floor Wear to a minimum.

Increase efficiency of employees.

Free

DARNELL MANUAL

Eliminate wracking of equipment.

Darnell Corp., Ltd.

LONG BEACH, CALIFORNIA
36 N. CLINTON ST., CHICAGO
60 WALKER ST., NEW YORK CITY

keep 'em rolling

tioned successfully since that date.

Edward E. Busek, 62, head of Milwaukee (Wis.), Dyeing & Bleaching Co., and prior to that a superintendent at Phoenix Hosiery Co. for 25 years, died June 14 in a Milwaukee hospital.

Eugene A. Reilly, 52, partner in the cloth brokerage firm of Pray & Reilly, New York, died at his home in Flushing, L. I., last month. For over 36 years his entire business career, Mr. Reilly was associated with Charles Pray.

August A. Forman, 76, for 20 years associated with General Silk Mills and the Forman Silk Mill, Passaic, N. J., died recently. He retired in 1922.

Charles Elwood Ritter, 40, president of the Superior Underwear Mills, Bechtelsville, Pa., died in Philadelphia last month.

Louis Salomon, 62, retired selling agent for wool goods mills, died in New York recently.

Ralph Allan, 86, former executive of Canadian Spool Cotton Co., Montreal, died last month.

Crawford F. James, 64, Marion, N. C., president of Elizabeth James Mill No. 1 and No. 2, president of Etta Paper Box Co. owner of the James Hotel, and one of Western North Carolina's most prominent industrialists and philanthropists, died June 16 at Hot Springs, Ark.

Joseph Barber, formerly president and general manager of George W. Harris Co., Lowell, Mass., died in that city on May 26. He was a native of England; became associated with the Harris company in 1898, and later organized the Barber Mfg. Co., Lowell, retiring about 14 years ago.

Chester A. Woodward, 57, president of Rockland (Mass.) Webbing Co., died May 21.

Abraham Lincoln Warren, 81, for many years an executive in woolen mills in Newport, N. H., and vicinity, is dead. He was connected with Dexter Richards & Sons (now the Gordon Woolen Mill) in Newport for nearly 40 years, and was an overseer in a woolen plant in Northfield Falls, Vt., for 10 years.

James A. Wardlaw, 80, retired founder and operator of Wardlaw Hosiery Mills, Chattanooga, Tenn., died May 16 at Miami, Fla. He also founded the wholesale mercantile firm of Wardlaw & Co.

Col. Herbert Fay Gaffney, 71, for over 25 years an executive of Sonoco Products Co., Hartsville, S. C., died recently. He had lived in Columbus, Ga., for many years. His early business career was in the field of life insurance.

William J. Finn, 60, for the last 40 years owner of the Neponset Woolen Mills, Canton, Mass., died at Milton, Mass., June 15.

Edward A. Mason, 67, purchasing agent of the Crompton & Knowles Loom Works, Worcester, Mass., for about 42 years, died at Shrewsbury, Mass., on June 7.

Jack Ward, 82, retired cotton mill executive, died June 15 at his home near Pelham, S. C. Mr. Ward, who was superintendent of Pelham Mills for about 40 years, retired in 1934.

Franklin Threapleton, Elkins Park, Pa., died June 20. He was formerly member of the firm of William B. Threapleton's Sons, hosiery manufacturers, Philadelphia.

Thomas Hoyle Phillips, 69, retired woolen mill operator, died June 10 at his home in Blackburn, N. C. Mr. Phillips operated a woolen mill at Blackburn, later moving it to Maiden, N. C., where he was affiliated with the Carolina Mill. He sold out 25 years ago.

Edgar Weaver, 54, Greensboro, N. C., superintendent of the print department of Proximity Print Works, and a member of the Greensboro City Council representing District 1, died suddenly June 11.

Charles F. Worcester, 84, retired supervisor at Great Falls Mfg. Co., is dead in Somersworth, N. H., where he had resided for 55 years.

Albert L. Sprague, 65, former superintendent of the woolen division, Uxbridge Worsted Co., of Uxbridge, Mass., died recently. He was a cloth inspector for the QM in the first World War.

John R. DuBois, 65, overseer of the cloth room at Joanna Cotton Mills, Goldville, S. C., died June 6.

Thomas Johnson, chemist at Monarch Knitting Mills, Dunnville, Ont., died recently.

W. H. McDaniel, 65, superintendent of Flint River Cotton Mills, Albany, Ga., died June 1.

Walter VanReed High, 56, foreman of the seaming department at Oakbrook Hosiery Mills, Reading, Pa., died June 9 in Reading, Pa.

James W. Morris, 31, assitant paymaster for the Fulton Bag & Cotton Mills, died at the Grady Hospital, Atlanta, Ga., June 2.

This SAFE LOW TITER SOAP Helps Guard Against

Costly Processing Errors!

Today's tight production schedules leave no room for processing mistakes. And that's one big reason why alert textile men are taking advantage of the safe, efficient processing results obtainable with Olate.

FOR SCOURING AND FULLING WOOLENS

Olate has the excellent lubricating properties so important in the safe scouring and fulling of woolens and worsteds. It has the detergency necessary for loosening the dirt and oil present in these fabrics. And the emulsifying qualities essential in maintaining impurities in suspension until they can be flushed thoroughly from the fibers.

Because of its low titer, Olate solutions are fluid. They provide thorough, even penetration of the cloth . . . help to guard against bare spots, uneven shrinkage, non-uniform fulling and poor felting. And Olate's free rinsing properties help produce clean, sweet-smelling goods.

FOR RAYONS AND ACETATES

Olate's gentle action is a valuable asset in scouring and dyeing fabrics made from rayons or acetates alone as well as fabrics which combine these man-made fibers with natural fibers. Here Olate helps guard against uneven shrinkage. It helps guard against streaks, dye blotches and chafe marks.

In many ways, Olate is proving to be an efficient "helper" in providing smooth, wartime production for countless mills. There's likely to be a spot in *your* mill where Olate can do its bit.

Procter & Gamble

Olate— *safe and efficient for every textile soap usage!*

WATATIC • WACHUSETT • FITCHBURG •

Effective Immediately

Fitchburg Yarn Company
Watatic Spinning Mills, Inc.
Wachusett Spinning Mills, Inc.
all of Fitchburg, Mass.
will merchandise their Yarns
through the
Fitchburg Spinners Sales Corporation
with headquarters at Fitchburg
Telephone, Fitchburg 65
Representatives are being appointed for
NEW YORK BOSTON CHICAGO
PHILADELPHIA AND READING, PA.

SHAMROCK

Canvas **Baskets, Trucks**

Speed-up production—Keep 'em rolling

Ask your Jobber TODAY! **MEESE, INC. Madison, Ind.**

TEXTILE MILL NEWS

Cotton Mill News

Abernathy Yarn Mills, Statesville, N. C., have installed 24 new H & B cards, 36 deliveries of H & B new drawing, and H & B high-draft roving throughout the roving processes.

American Yarn & Processing Co., Woodlawn unit, Mount Holly, N. C., has installed seven new Saco-Lowell combers, replacing 13 of the older type.

Aragon (Ga.) **Mills,** a unit of A. D. Julliard & Co., are constructing a one-story addition, 60x130 ft., with Wright & Loper, Cedartown, Ga., in charge of the work.

Atlas Hemp Mills, Juneau, Wis., have awarded general contract to Rhode & Kappelle, Mayville, Wis., for one-story addition, about 40x60 ft., to be equipped for expansion in production. Arthur Kuenzi, Watertown, Wis., is architect for this addition.

Albert J. Bartson, Inc., Charlotte, N. C., is installing 48 additional Crompton & Knowles automatic looms, 54 inch.

Bay State Thread Works, Springfield, Mass., have filed plans for improvements in mill, and will carry out work by day labor.

Bridgeport (Conn.) **Fabrics, Inc.,** has awarded contract to John L. Simpson, 41 Putnam St., for a 1-story, brick and concrete addition, 25x80 ft. O. N. Rasmussen, Bridgeport architect, drew the plans for the addition.

Brown Mfg. Co., Concord, N. C., has installed some Proctor & Schwartz dryers and tender frame housings. The company also plans to purchase a Mount Hope Swing Guider.

Clover (S. C.) **Spinning Mills, Inc.,** has completed installation of 24 H & B cards, 24 deliveries of H & B drawing, and high-draft roving throughout the card room.

Elberton (Ga.) **Mills, Inc.,** are completing changes and improvements in mill equipment for production of duck for Government service and will develop large output in that line at early date.

Gordon Spinning Co., North Wilkesboro, N. C., has been organized with capital of $150,000, to operate a local cotton mill. New company is headed by S. V. Tomlinson and J. R. Hix, president and treasurer, respectively, of Grier Mills, North Wilkesboro.

Graniteville Co., Sibley unit, Augusta, Ga., is installing four 1000-lb. Morton system raw-stock dyeing machines.

Greensboro (N.C.) **Weaving Co.,** plans a $30,000 addition to be constructed as soon as building permits have been obtained. It will be one-story, with 13-inch brick walls, 101x219 ft. It will add materially to the capacity of the plant.

Lakeside Mills, Fayetteville, N. C., have installed new opening and picking equipment, 30 new cards, considerable drawing and long-draft roving, all of which was furnished by Saco-Lowell Shops.

Lane Cotton Mills Co., New Orleans, La., is erecting a one-story L-shaped addition, about 160x290 ft. The contracting firm is George J. Glover Co., New Orleans.

Mauney Mills, Kings Mountain, N. C., have completed a new two-story mill building, 100 x 50 ft., which will soon be ready for operations. New machinery has been installed, also a dye department.

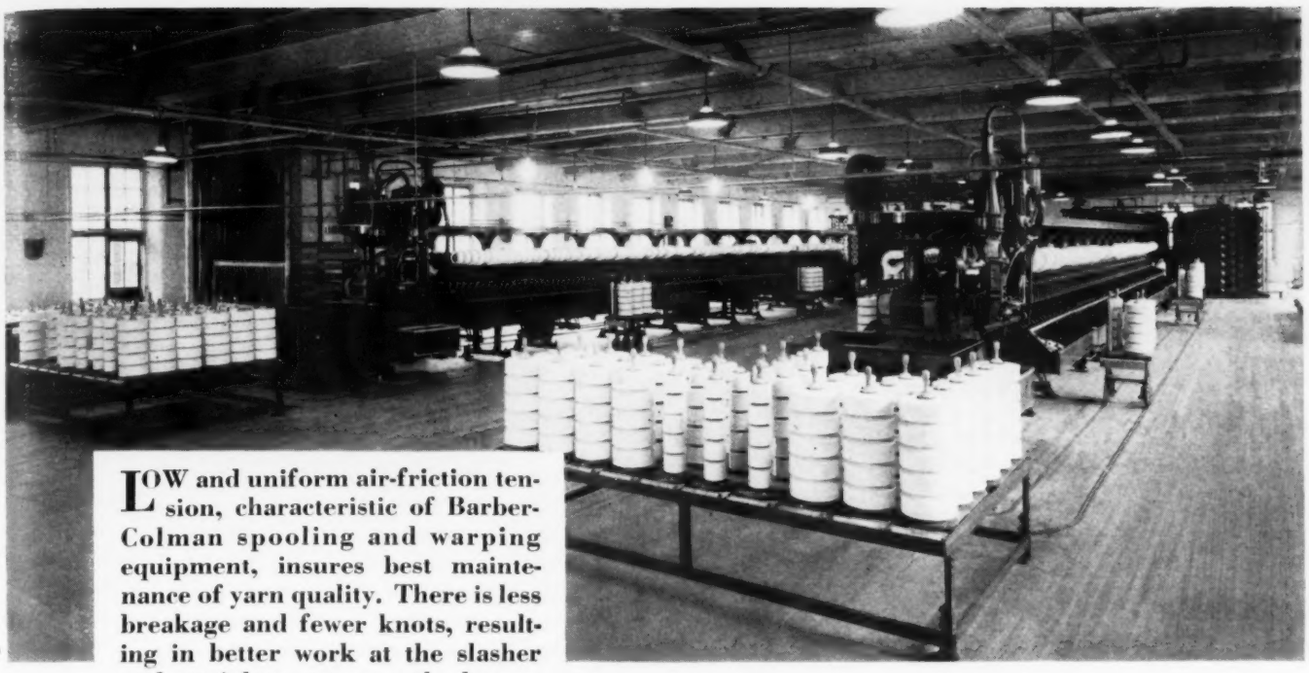
Louisville (Ky.) **Textiles, Inc.,** has been engaged in changing over looms to manufacture bag osnaburg and bag sheeting for the Government.

Marjane Weaving Corp., Charlotte, N. C., recently chartered with capital of $100,000, has leased local property at 504 South Graham St. for new mill for production of webbing for Government service (instead of rayon, etc., as previously reported). F. F. Warrington is president; J. B. Rudisill, vice-president and treasurer; and Frank W. Orr, secretary, all of Charlotte.

Milkweed Floss Corp. of America, Inc., care of Corporation Trust Co., Industrial Trust Building, Wilmington, Del., recently chartered under Delaware laws, is said to be planning early construction of new mill at Petoskey, Mich., for the processing of floss, suitable for use in life preservers and for other service. New product will be a substitute for kapok, an imported material now difficult to secure. Proposed mill will have an initial rated output of about 1,000,000 lbs. per annum.

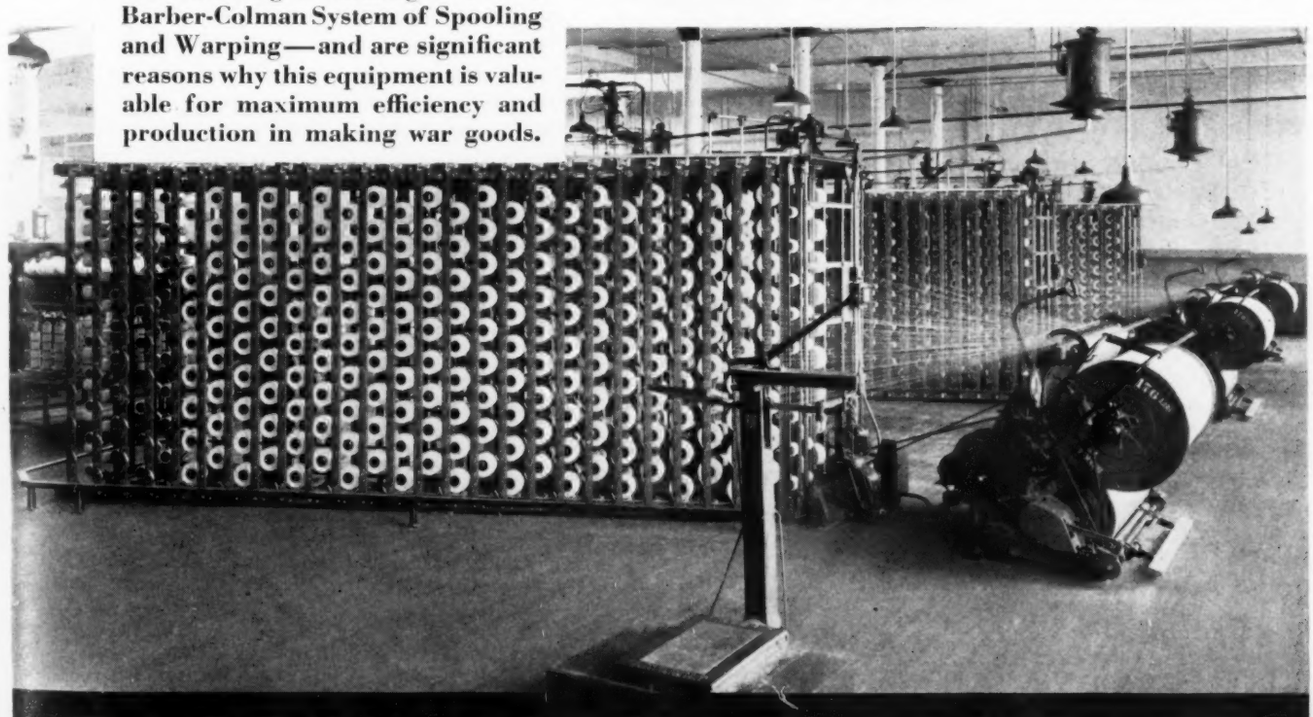
Mooresville (N. C.) **Cotton Mills** have completed installation of long draft spinning equipment and the mills are now equipped throughout with this type of machinery.

National Automotive Fibers, Inc., Huntington Park,



LOW and uniform air-friction tension, characteristic of Barber-Colman spooling and warping equipment, insures best maintenance of yarn quality. There is less breakage and fewer knots, resulting in better work at the slasher and straighter warps at the looms. Cleaning devices break out gouts, bad piece-ups, and thick places, reducing loom stops and seconds to a very marked degree. Less help is required to wind a given amount of yarn than on hand-operated equipment. The "trident" system of handling cheeses gives best protection against damaging yarn on the packages. These are some of the outstanding advantages of the Barber-Colman System of Spooling and Warping—and are significant reasons why this equipment is valuable for maximum efficiency and production in making war goods.

BARBER-COLMAN AUTOMATIC SPOOLERS SUPER-SPEED WARPERS



BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

Announcement

★

TODAY, more than 16,000 Chapman Static Neutralizers throughout the United States and Canada are helping industry maintain *increasing* production schedules by neutralization of static developed in many manufacturing operations.

The Kidder Press Company, Dover, N.H. and its predecessors who for more than a quarter century have served as our agents in sales and installations of the Chapman Static Neutralizer, have retired from the agency business.

Effective June 1, 1942, the Chapman Electric Neutralizer Co. began serving all customers directly from its home offices at Portland, Maine, and will maintain complete installation service.

★

Your inquiries are cordially invited

CHAPMAN ELECTRIC NEUTRALIZER CO.
Eliminators of Static Electricity in Manufacturing Operations
PORTLAND · MAINE

***Faster Skein Reeling plus Savings with* FIDELITY TWIN-UNIT SYSTEM**

Five Outstanding Advantages:

1. Easier, lighter work for operator—no high lifting.
2. Greater output per hour—30 to 50 seconds doffing and clipping cycle.
3. Close control of skein weight and yardage.
4. Greater flexibility for changes in production, dye lots, yarns, etc.
5. Space saving—up to 50% less floor area.

These five and ten more advantages described in Bulletin 3909 on FIDELITY Skein Reeling Machines. Write for it.

OTHER FIDELITY MACHINES
Braiders
Backwinders
Circular Knitting Machines
Cylinders and Dials
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Fringe & Tassel Machines
Giant Package Winders
Raschel Machines
Ribbers
Wire Covering Machines
Belt Loop Cutters
Pocket Folding Machines
Special Machines designed and built

FIDELITY MACHINE CO.
3908-18 FRANKFORD AVE., PHILADELPHIA

Calif., has awarded contract for construction of three new warehouse buildings of brick and concrete, at 6091 Randolph street, at a cost of $76,900.

Piedmont Cotton Mills, Egan, Ga., have awarded contract to Flagler Co., Atlanta, Ga., for an expansion program which calls for construction of a one-story addition and improvements to the mill.

Riverside & Dan River Cotton Mills, Danville, Va., have installed Saco-Lowell blending reserves and modernized the opening and picking departments of all plants.

Rockfish Mills, Inc., Cumberland, N. C., has completed construction of a new addition, measuring 78x60 ft., to be used for a new opener and picker room. All opening equipment will be new. A complete air system by Whitin will be installed, also new blenders and feeders.

Russell Mfg. Co., Middletown, Conn., has begun erection of two one-story additions, about 40x45 ft., and 20x80 ft., for which general contract recently was awarded to Denis O'Brien & Sons, Inc., Westfield, Conn.

Shoe Fabrics, Inc., 19 Chestnut St., Cambridge, Mass., recently chartered with capital of $50,000, plans operation of mill in this vicinity for production of fabrics for shoe uppers. Alfred H. Avery is president; John B. Reid, 1986 Commonwealth Ave., Boston, is treasurer and representative.

Spinners, Inc., with principal office in Gastonia, N. C., has been chartered with authorized capital of $100,000 and subscribed stock of $12,000 to manufacture yarns, cloths and all kinds of textile fabrics. The principals include J. P. Sanders, R. J. Hooker, Eleanor S. Reynolds, Luther Reynolds, all of New York, and J. L. Gray, Jr., of Gastonia.

Superior Yarn Mills, Mount Holly, N. C., have installed five Saco-Lowell combers, replacing 11 of the older type combers.

Vanco Mills, Henderson, N. C., sold to L. M. Bullock and W. J. Alston at a trustee's sale, for $22,500, have been turned over to the new owners.

Waverly Mills, Inc., Laurinburg, N. C., has installed H & B high-draft roving throughout the card rooms in both plants.

West Point Mfg. Co., Fairfax, Ala., is constructing an addition which will provide about 70,000 sq. ft., of floor space. Robert & Co., Atlanta, Ga., prepared the plans. The company's plant at West Point, Ga., has completed its $225,000 waste unit.

Winder (Ga.) Cotton Mills have been reopened to manufacture heavy duck. O. F. Feil of Atlanta, Ga., is owner, and it is reported that J. J. Scott of Scottdale (Ga.) Mills, is likewise interested in the project.

Winton Mills, Banning, Ga., will soon complete removal of all equipment to the other mills of the same company at Cottondale, Ala., and Fort Valley, Ga.

Wool Mill News

Ammerall Rug Co., Amsterdam, N. Y., recently organized, is now operating a local mill on Washington St., and has added additional looms, making a total of six now in service on a three-shift daily production schedule. Peter Ammerall, Jr., is head.

Bristol Rug Mills, Inc., Taunton, Mass., have been incorporated with capital of $10,000, and plan operation of a mill in this vicinity. Bernard L. Gorfinkle, 59 Algonquin Rd., Newton, Mass., is president and treasurer.

Chatham Mfg. Co., Elkin, N. C., through its president, Thurmond Chatham, has given the town of Elkin a modern Y.M.C.A., and it has been named in honor of the late Capt. Gilvin Roth, who became associated with the manufacturing company in 1879 as superintendent, was taken into the firm in 1892, and was vice-president until he retired.

Chippewa Falls (Wis.) Woolen Mill Co. has begun erection of two-story addition, about 30x60 ft., for which general contract recently was let to Tschopp - Durch - Camastral Co., Chippewa Falls. It will be used for warehouse service.

Cleveland (Ohio) Worsted Mills Co. recently suffered fire loss reported at about $5000. The damage will be replaced.

Dustin Island Woolen Mills, Penacook, N. H.—Fire recently damaged a building at this mill, used for warehouse service. No estimate of loss announced. It is planned to rebuild.

Gaunt Worsted Co., West Warwick, R. I., recently installed six looms, making a total of 18. Arthur Gaunt, Jr., who was interested with his father in the business, is now in the aircraft engineering division of the Marine Corps.

Glenside Mills Corp., Skaneateles Falls, N. Y., has filed a petition to reorganize under Chap. X.

Caustic keeps 'em rolling . . .

• Every pound of rubber that is reclaimed from the junk heap is part of a larger reclamation program . . . helping to win back half a world that is being subjected to systematic waste. • In the process of reclaiming rubber, caustic soda plays an important part, the dissolving of cotton fabric. • But this is only one of the many wartime uses for caustic soda. A vital chemical product, it helps to recover tin from scrap, to refine petroleum products and to produce glycerine for explosives. • Michigan Alkali Caustic Soda, along with many other Michigan Alkali Products, is helping to further the progress of the nation in war, as it has done through many years of peace.

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FORD BUILDING, DETROIT, MICHIGAN

NEW YORK • CHICAGO • CINCINNATI • ST. LOUIS • CHARLOTTE • WYANDOTTE

DISTRIBUTORS IN ALL PRINCIPAL CITIES

SODA ASH • CAUSTIC SODA • CHLORINE • BICARBONATE OF SODA • CALCIUM CARBONATE • CALCIUM CHLORIDE • DRY ICE

Drummond SOAP

Here is a high-body product with all the qualities you look for in a fine textile soap. Drummond is a pure soap of low alkali content and without filler of any kind. . . . It has a high binding quality that results in minimum flocking. . . . Rinses easily and completely thus cutting down on the cost of steam and water. . . . Improves fulling and scouring operation, leaving fabric perfectly clean with softest feel, better hand, brighter colors and whiter whites. . . . Glad to send you a sample for testing on your own goods—no fee, no obligation.

OTHER HIGH GRADE "STANDARD" PRODUCTS
Stanso Palm Oil Curd Soap, Etc.

Standard Soap co. of camden

Charlotte, N. C.
CATO M. LITTLETON
426 PARK TERRACE

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AIR CONDITIONING

HUMIDIFYING
ATOMIZERS
UNIT SYSTEM
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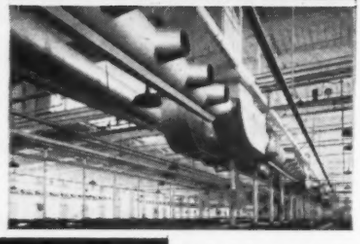
ENGINEERS—EQUIPMENT FOR THE TEXTILE INDUSTRY



Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

For 25 years we have been successfully solving the air-conditioning problems of the Textile Industry.

Time is Short—Testing Saves It!

More than ever before, the textile industry is having to "feel its way", and experimental rooms are working 'round the clock to answer the thousand-and-one questions involved in using new fibres and manufacturing unfamiliar goods. The 57 models of *Scott Testers provides quick, sure answers to problems of purchasing and manufacture involving tensile strength, hysteresis, crepeage, flexing, adhesion, burst, etc.

SCOTT TESTERS

*Registered Trademark

HENRY L. SCOTT CO. 95 Blackstone St. Providence, R. I.

Greenville (Ala.) unit of the Merrimac Hat Corp., now in operation, has an initial machinery set-up of 10 carding machines and one multi-roller. Another one of these machines is to be installed.

French Worsted Co., Woonsocket, R. I., has plans for a plant addition. Walter F. Fontaine, Inc., Woonsocket, will draw the plans.

Jefferson Woolen Mills, Knoxville, Tenn., are planning early rebuilding of warehouse unit at mill, damaged by fire. An official estimate of loss has not been announced.

La France Textiles Ltd., Woodstock, Ont., are erecting a brick warehouse adjacent to the employee's recreation grounds on Bay street, that city. The structure will cost approximately $5,000.

Lebanon (N.H.) **Woolen Mills Corp.** has awarded general contract to W. H. Trumbull, 11 Lebanon St., Hanover, N. H., for two-story mill addition. Cost reported close to $50,000, with equipment.

Ottewell Textiles Ltd., Owen Sound, Ontario, idle for some time, is soon to be in operation, a keen demand for woolens for military and civilian use creating a necessity for its use. The plant was recently acquired by William Looser & Co., of Toronto, from the former owners, Andrew E. and George E. McVittie, of Sudbury, Ont. The business was formerly known as Northern Textiles Ltd.

Schofield Woolen Co., Ltd., Oshawa, Ont., sustained a fire loss recently in carding mill, reported at close to $75,000. It is planned to rebuild at early date.

Stillwater Worsted Co., has started work on a brick and steel plant at Mapleville, R. I. From private plans contract was awarded to Arthur M. Vick, Providence, for a plant 50x100 ft., with a wing 50x60 ft., to cost $40,000.

Vacuum Wool Co., Ltd., Ladysmith, B. C., is said to have plans under way for new one-story mill on local site, reported to cost close to $60,000, including equipment.

Rayon & Silk Mill News

Aeronautical Supplies, Inc., Reading, Pa., has been incorporated to spin, weave, manufacture, etc., various textile fibers including Nylon, rayon and silk. Body, Muth & Rhoda, Reading, are the attorneys.

American Enka Corp., Enka, N. C., has begun construction of a second extension to the twister building, which will be one-story, 82x200 ft., of steel and reinforced concrete.

American Viscose Corp. reports profit, after all charges including $3,385,000 for Federal taxes, of $1,445,475 for the first quarter of 1942. This compares with $1,548,692 for first quarter of 1942 after deduction of $1,240,000 for taxes. Net sales for the 1942 quarter were $22,199,314, a 30% rise from year previous.

Amoskeag-Lawrence Mills, Inc., Northern Division, has work underway on a new brick boiler plant, 2 story, 50x55 ft., on Dow Street, Manchester, N. H. Estimated cost is $10,000.

Bruce Silk Mills, Ltd., Cowansville, Que., plans extensions and improvements in boiler plant at mill, including installation of additional equipment. Cost reported close to $50,000, with equipment. McDougall & Friedman, 1221 Osborne St., Montreal, Que., are consulting engineers on this job.

Goodman & Thiese, Scranton, Pa., was damaged by basement explosions late in May, which were believed to have been caused by gas, which in turn was caused by flood conditions existing at the time.

Kingsboro Silk Mills, Inc., Gloversville, N. Y., has removed all of its manufacturing operations to its two units in Tennessee, one at Daisy, and a larger unit at McMinnville.

Severn Mills Corp., Hyde Park, Boston, Mass., has filed plans for alterations in mill at 1608 River St., and will carry out work at once. No estimate of cost announced.

Smithfield (N. C.) **Mfg. Co.,** a subsidiary of Burlington Mills Corp., Greensboro, N. C., has installed new equipment throughout the mill with the exception of the cards. The new equipment was furnished by Saco-Lowell Shops.

U. S. Rayon Corp., Danielson, Conn., recently organized with capital of $10,000, plans operation of local mill for manufacture of rayon products. Incorporators are David Scharge and Robert Bader, both of New York, N. Y.

Woonsocket (R. I.) **Rayon Co.,** Clinton Street, has filed plans for a boiler plant, 45x45 ft., and 50 ft. high, of brick construction. Jenks & Ballou, Providence, are the engineers. Contract for the construction work will be awarded soon.

RESYNON*

A New Finish for RAYON HOSIERY

*The Ladies Will Like It!

1 It gives extra body without stiffening.

2 It does not require baking, being fixed by ordinary drying.

3 It improves the brightness of colors.

4 It will not discolor or turn rancid.

5 It is relatively permanent.

6 It is non-greasy and odorless.

7 It effects big savings.

Also ask us about our complete line of scouring materials

SEND FOR SAMPLES

ARNOLD-HOFFMAN & COMPANY, INC.

Established 1815 **PROVIDENCE, RHODE ISLAND** Plant at Dighton, Mass.

NEW YORK · BOSTON · PHILADELPHIA · CHARLOTTE

WHITMAN YARNS

WORSTED • COTTON • SPUN RAYON

ARLINGTON MILLS
LAWRENCE, MASS.

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MONOMAC SPINNING CO.
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NONQUITT MILLS
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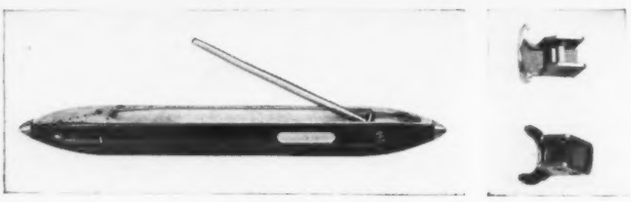
WILLIAM WHITMAN COMPANY, INC.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE



A NEW GIRT HAS BEEN ADDED TO THE ONE PIECE GUIDE AND CATCH

This girt, a new development for Watson-Williams rayon shuttles, stops the spindle from raising too high and thus prevents the top of the shuttle from splitting. It also holds the spindle level.

WATSON-WILLIAMS MFG. CO.
THE SHUTTLE PEOPLE • MILLBURY, MASS.

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BACK ISSUES OF TEXTILE WORLD.

A limited number of copies of TEXTILE WORLD for the months from December 1941 through May 1942 are now available. These are available at 25c a copy for as long as they last. Address your order to . . .

Subscription Department

TEXTILE WORLD
330 West 42 Street New York

Knitting Mill News

Beaunit Mills, Inc., Lowell, N. C., have completed a new dyehouse unit, and equipment has been placed in service. Installation includes two fully enclosed-type Rodney Hunt dye-machines and accessory equipment. Beaunit Mills reports for year ended Mar. 31, 1942, consolidated net profit after all charges and taxes of $612,001 compared with $288,829 for previous fiscal year.

Biltmore Hosiery Co., Naples, N. C.—Mill of this company has been acquired by M. M. Rudisill, Lincolnton, N. C., and associates. Plans are under way for improvements, with conversion of plant for a yarn and thread mill.

Erwin Mills, West Huntsville, Ala., a knitting plant that formerly employed about 200 operatives, and idle several months, is being conditioned for resumption of operations.

Hand Knit Hosiery Co., Sheboygan, Wis., has work under way on addition to boiler house, for which general contract recently was awarded to Arthur Hummitzsch, Sheboygan. This is part of expansion and improvements previously reported.

Infants' Socks, Inc., Eufaula, Ala., have taken over a building on Randolph St., and will occupy for increased capacity. Additional knitting machines and auxiliary equipment will be installed.

Edwin C. Millard, proprietor of Millard Yarn Co., Ballston Spa, N. Y., has purchased the Manogues Lumber mill and yard on Bath street, this place. Work on remodeling the property for immediate use has been started. Mr. Millard will use the lumber mill building for a knitting mill.

Phoenix Hosiery Co., reports net sales for 1941 of $9,651,352 compared with $8,856,444 in 1940.

Princeton Knitting Mills, Inc., Watertown, Conn., has let contract to H. Wales Lines Co., Meriden, Conn., for general repairs to its factory at 118 Echo Lake Road.

Southland Hosiery Mill, Greensboro, N. C., was granted permission by the city to erect a 30x34 ft. frame addition to be used as a dyeroom.

United Knitting Co., Union, S. C., women's rayon hosiery, will begin operations June 1. It will give employment to 400 persons, with a capacity of 500 pairs of rayon stockings a day.

Unity Knitting Co., Union, S. C., has been purchased by Joseph A. Conrad and has been renovated and was put into operations June 1, to produce 500 doz. prs. of socks weekly.

Waldensian Hosiery Mills, Valdese, N. C., have installed a new 40-inch Fletcher Extractor, equipped with automatic timing and hydraulic brakes.

Washington Mills Co., Mayodan, N. C., has constructed a new dyehouse and put it into operation.

Processing Plant News

Aspinook Corp., Jewett City, Conn., has arranged with Beacon Industrial Corp., Fall River, Mass., for operation of the Jones Division of Arnold Print Works, Adams, Mass., recently purchased by Beacon company (previously reported), and full production will be maintained pending the sale of the property to other interests, as now planned. North Adams mill of Arnold company is being liquidated by the Beacon Corp. Aspinook Corp. also is continuing production in part of the former mill of Pacific Print Works, Lawrence, Mass.

Holliston Mills, Kingsport, Tenn., have begun construction of a one-story warehouse, reported to cost about $15,000, with equipment. Erection will be carried out by day labor.

Newark Coating Co., 900 Passaic Ave., East Newark, N. J., coated textile fabrics, oil silks, etc., has taken space in building at 302 Ogden St., Newark, approximating 3500 sq. ft., and will use for expansion.

Pierce Dye Co. has awarded contract to Dean W. Rankin for construction of a 1-story brick and concrete addition to its plant at 1390 East 49th St., Cleveland, Ohio. The new unit will be 40x42 ft. and will cost more than $30,000 with equipment.

Royal Screen Printers, Inc., Paterson, N. J., care of William B. Kaufman, 5 Colt St., Paterson, attorney and representative, has been chartered with capital of 2500 shares of stock, no par value, to operate a local textile print works.

Supreme Dyeing & Finishing Co., Inc., Paterson, N. J., care of Charles R. Turndorf, 136 Washington St., attorney and representative, recently organized with capital of 2500 shares of stock, no par value, plans operation of a local dyeing and finishing mill.

United States Finishing Co. reports net profit after all charges for 1941 of $193,046 compared with net loss of $262,644 in 1940.

HOW MUCH PER SOCK DO YOU PAY FOR PARTS?

If you are figuring the cost of your knitting machine replacement parts on a "per sock production" basis, you have long since discovered how much more expensive it is to use "cheap" repair parts rather than genuine Scott & Williams parts.

Your S & W knitting machines are highly complex, precision engineered and built machines, installed by you to serve your customers better and increase your profits. You could not expect a local machine shop to produce such machines. Can you expect it, then, to produce *duplicates* of their original parts? A duplicate can be made only over the same designs and tools, by the same methods, from the same materials, by the original maker, who alone knows the function of each part and its relation to the complex whole.

Scott & Williams, has designed much of its manufacturing equipment specialy for its own particular needs; and seventy-seven years experience with materials have resulted in discovery of special sources of supply, special material formulae and special methods of heat-treating. It is, therefore, practically impossible for any other plant to make *exact* duplicates of S & W knitting machine parts.

Unless parts are replaced with duplicates, you must expect increased percentages of rejects, lower machine efficiency and decreased production due to "cheaper" replacement parts. The use of Scott & Williams parts for Scott & Williams machines is true economy and the only safe procedure.

We are endeavoring to keep most of the 55,400 different S & W standard part replacements available for prompt shipment on receipt of your order. However, due to the national emergency, we suggest that you keep on hand at least a minimum stock of more likely part replacements. Teletype service is FREE from our High Point and New York Offices.

ESTABLISHED 1865

SCOTT & WILLIAMS

INCORPORATED

40 WORTH STREET, NEW YORK, N. Y.

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

"WHAT! YOU DON'T KNOW WHO

Fortunately, not all bosses are as explosive as the old boy in the corner.

But not knowing "who makes it," you will admit, is *poor business* in any man's language. It costs money. It wastes time. Especially as, in the case of the textile mill man, the answer is so readily available.

The answers to this question—and many others—are contained in the Textile World Yearbook and Catalog; and there's a copy of this handy reference volume in every textile mill in the country.

This year, more than ever before, Textile World Yearbook and Catalog will be a *must* item for textile mill men. Because this year, with the national defense program increasing the demand for textiles for military use, for consumer use and for industrial use, mills will be busier than ever. Buying for maintenance, for replacement, for modernization will be stepped up. Under these conditions time becomes doubly valuable.

Time lost in groping for product data will be time wasted during a period when a short delay in placing orders for equipment and supplies may mean a serious disruption of production schedules in your mill.

That's why we say: "*Use* your copy of Textile World Yearbook and Catalog." Use it every time a "who makes it" question comes up in the day's work. Textile World Yearbook and Catalog is a time saver, a trouble saver and a money saver for every alert mill man. The more you use your copy, the more valuable it becomes.

ATTENTION MANUFACTURERS of Equipment and Supplies!

Before you start work on your 1942 catalog, find out how you can save time and money in the arduous task of compiling and distributing your product catalog for the textile industry. A new plan of catalog production and distribution, enables you to secure individual catalogs for immediate mailing to your customers and live prospects, followed by blanket distribution of your "pre-filed" catalog later in the year, with last minute revision service.

Get *double value* PLUS from your catalog dollar in 1942.

A Textile World representative will be glad to explain how this new catalog plan works.

Do You Know Who Makes–

Feeler Motions?

See page 386 of the 1941 Textile World Yearbook and Catalog.

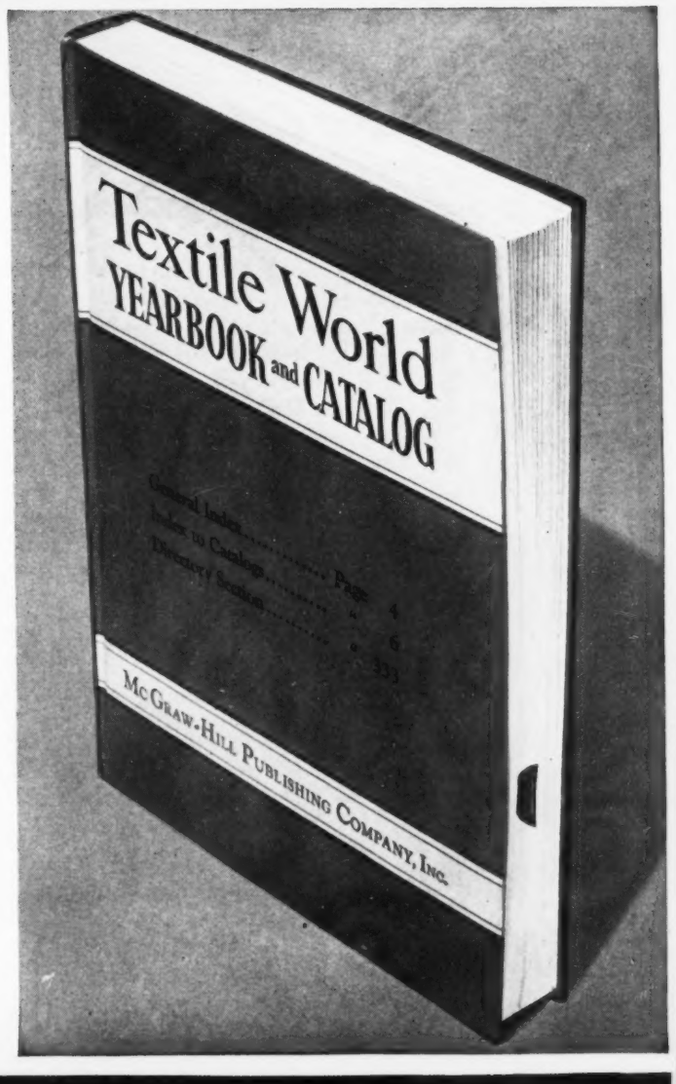
Thread Waxing Machines?–

See page 404 of the 1941 Textile World Yearbook and Catalog.

pH Indicators?–

See page 393 of the 1941 Textile World Yearbook and Catalog.

Tomorrow, perhaps, you'll need to know about one of these products. Some of them may never come up in the operation of your mill. But whatever the question, "look it up first" in the Textile World Yearbook and Catalog which, in addition to more than 200 pages of helpful catalog data supplied by scores of the country's leading companies providing machinery, equipment, supplies, chemicals and services to the textile mills of the country; also contains a wealth of mill reference data compiled for your convenience by the editors of Textile World.



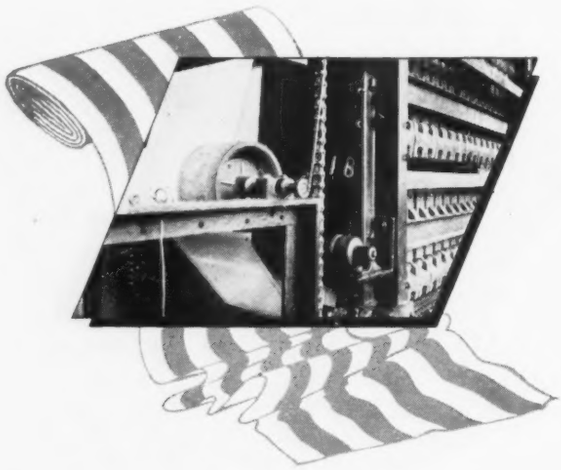
Textile World Yearbook and Catalog

A Unit of the McGraw-Hill Reference Service

330 West 42nd Street **New York, N. Y.**

If you seem to be getting too many "Seconds"

Your machine drives may be the cause. Check them for these fundamentals:



A *Are they positive*—or does slippage cause sloppy timing?

B *Are they dirty?* Do they gather lint or dust?

C *Do they put* a maximum amount of power into production?

Why use BALDWIN Roller Chain Belts?

● It's a proved fact that many textile mill operators have traced the source of too many "seconds" directly to their driving methods. Equally true is the fact that these same mill operators have eliminated this source of waste by adapting Baldwin roller chain belts to their drives on everything from garnetts to woolen cards, looms to printing machines. The reasons are many, but two important ones are:

Baldwin roller chain belts time intermachine functions to a split second and give a more even quality to the final cloth. Also, a Baldwin drive is a *clean drive!*

Next time "too many seconds" is your problem, call the Baldwin man. Baldwin-Duckworth, Division of Chain Belt Company, 346 Plainfield Street, Springfield, Mass. Factories at Springfield and Worcester, Mass.

PLEASE NOTE

Whether in relation to a defense problem or a commercial application, your inquiry will receive prompt attention. However, delivery of Baldwin products for the latter must be subordinate to the delivery of orders bearing priority distinction.

★

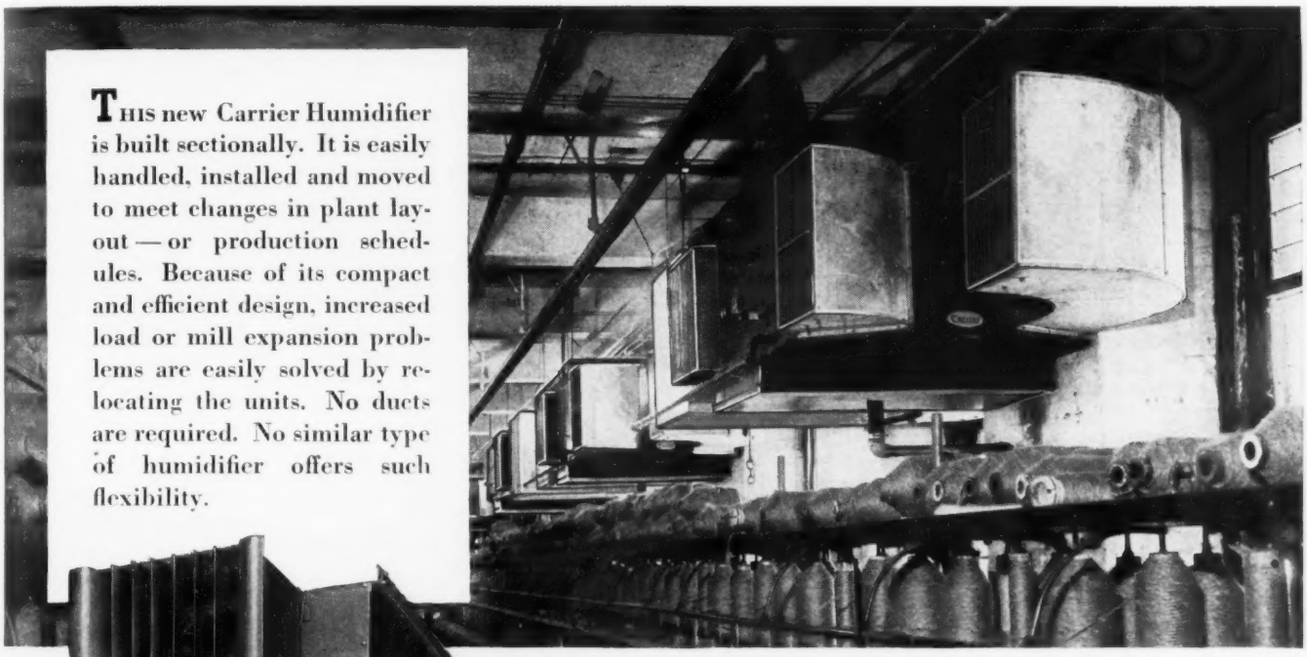
POSITIVE!

THAT'S **BALDWIN**

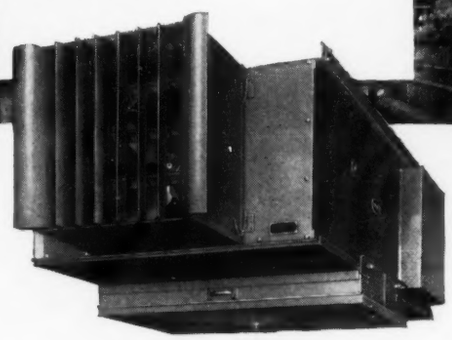
ROLLER CHAIN BELTS

FLEXIBILITY

The Important Advantage of the CARRIER INDUSTRIAL HUMIDIFIER



THIS new Carrier Humidifier is built sectionally. It is easily handled, installed and moved to meet changes in plant lay-out — or production schedules. Because of its compact and efficient design, increased load or mill expansion problems are easily solved by relocating the units. No ducts are required. No similar type of humidifier offers such flexibility.



(Left) **THE CARRIER INDUSTRIAL HUMIDIFIER** humidifies, cools or heats, cleans and distributes air in single or multiple units. Economical operation results from low power requirements. Ceiling suspensions saves valuable floor space.

(Above) **RECENT INSTALLATION** in leading textile mill. Because of insufficient clearance, units were placed parallel to wall. Extension elbows were added to outlets and a similar elbow was used for outside air intake.

The Navy "E", one of the U. S. Navy's most coveted honors, was awarded to Carrier Corporation for excellence in war production.

Carrier
Air Conditioning

Designed especially for textile mill war production—

HERE is low-cost, efficient humidification to meet the rigid requirements and fast changing production methods of today's speeded-up operations in America's textile mills. It is the result of Carrier's specialized engineering experience in the textile field. Whether you plan to air condition or humidify a single floor or entire mill, Carrier can help you.

OPERATING ADVANTAGES

1. *Floor Space Saved* by ceiling suspended unit.
2. *Undisturbed Production* during installation of sectionalized humidifier.
3. *Low Cost Operation* assured by new highly absorbent and relatively open wetting surfaces.
4. *Maximum Cooling Effect* and regularity of conditions assured by simple pneumatic controls.

Desk G44

CARRIER CORPORATION, Syracuse, N. Y.

Please send me without obligation information on the new Carrier Industrial Humidifier.

Name .....

Company .....

Address .....

City .....

IN ROOMS LIKE THIS
Pat'd and Pat's Pending
there are thousands of needs for this
set screw that positively locks when tightened-up.

UNBRAKO

SELF-LOCKING HOLLOW SET SCREWS

with the Knurled Points

Use "Unbrako" Self-lockers wherever vibration and jarring might cause ordinary set screws in looms and other machines to work loose. They are a good insurance against loss of time and production. The Knurled-point "Unbrako" when tightened up just like the ordinary set screw, digs in and stays there and can be removed just as easily.

Of course, it can be used over and over again. Write us today for more information or ask your local mill supply house. The chances are it carries them in stock.

Knurling of socket screws originated with "Unbrako" years ago.

UNBRAKO WELT-BAR SCREWS

They are uniformly strong and accurate and are sure to give complete satisfaction. Would you like a sample?

UNBRAKO

REG. U. S. PAT. OFF.

SOCKET SCREWS

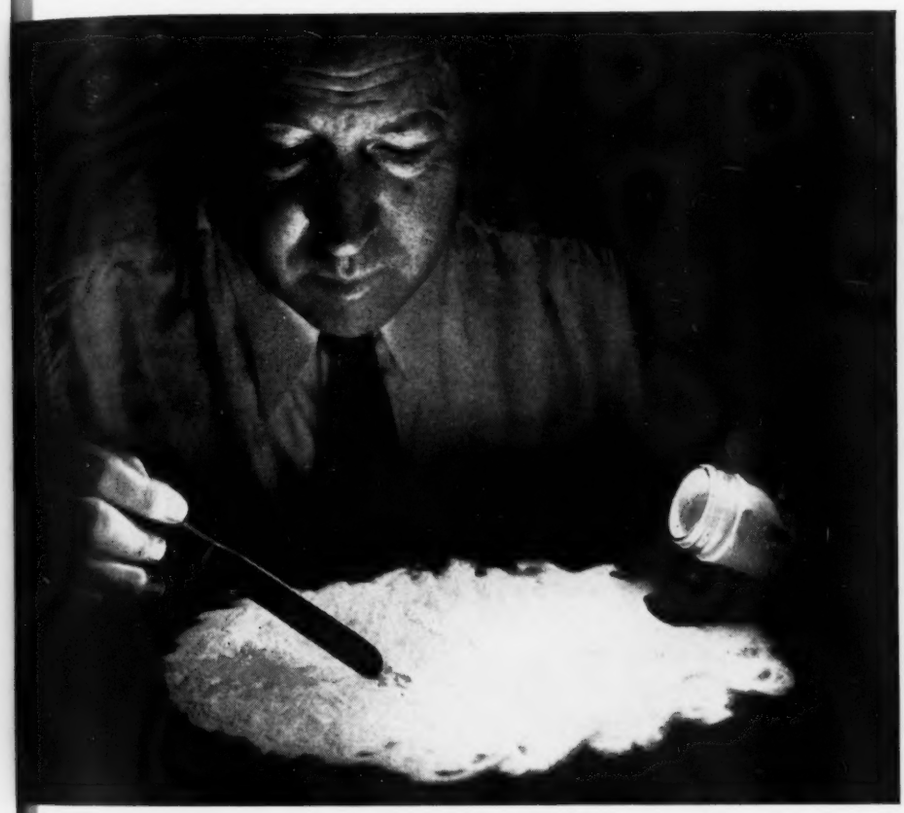
Socket Head Stripper Bolt: Square Head Set Screws

STANDARD PRESSED STEEL CO., BOX 571, JENKINTOWN, PENNSYLVANIA

BRANCHES: BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

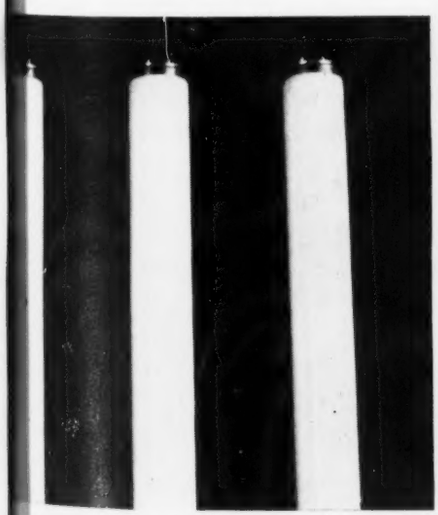
Why G-E Fluorescent Lamps "stay brighter longer"

A PICTURE STORY THAT'S WORTH READING. You want as much light for your money as you can get . . . to help speed war production, reduce waste, and avoid accidents. Here are just a few of the reasons G-E MAZDA F lamps are better today than ever before—why they give such dependable service—why they stay brighter longer.



1 DR. W. A. ROBERTS OF G-E LAMP DEVELOPMENT LABORATORY is studying the synthetic phosphors used in coating G-E MAZDA Fluorescent lamps to make them *stay brighter longer.* Up to June 1, General Electric had put approximately 450,000 man-hours of research into Fluorescent lamp improvements with the objective of giving the user more and more light for less and less cost.

2 A TINY DROP OF MERCURY like this is accurately measured and safely injected into G-E MAZDA F lamps by an automatic machine specially designed by G-E engineers. Results: lower cost and improved operations.



3 UNRETOUCHED PHOTO of 3 40-watt G-E MAZDA F lamps. One is brand new, second has burned 2030 hours, third has burned 2650 hours (150 hours more than rated life). Note absence of end-blackening.

4 GREATER COLOR UNIFORMITY is assured when it is controlled and checked by "electric eyes" with color filters. This is only one of the many routine checks constantly made in General Electric's Fluorescent lamp factories.

5 WHEN YOU BUY fluorescent lamps, look for the G-E monogram. It means they *stay brighter longer.* For best results it is advisable that you always use certified lighting equipment.

G-E MAZDA LAMPS **GENERAL ELECTRIC**

Count on MILLER Lighting and Engineering!

●

MILLER Continuous Wireway Fluorescent Lighting System

SAVES . . . POWER—Delivers maximum light output per kilowatt. • MANHOURS—Continuous wireway contains all operating auxiliaries, permitting rapid row-by-row installation. • CRITICAL METAL—As much as 47%, taking all items into consideration, power plant, distribution, controls, etc. • DOLLARS—Continuous wireway's features simplify installation, save from 30 to 50% of installation costs.

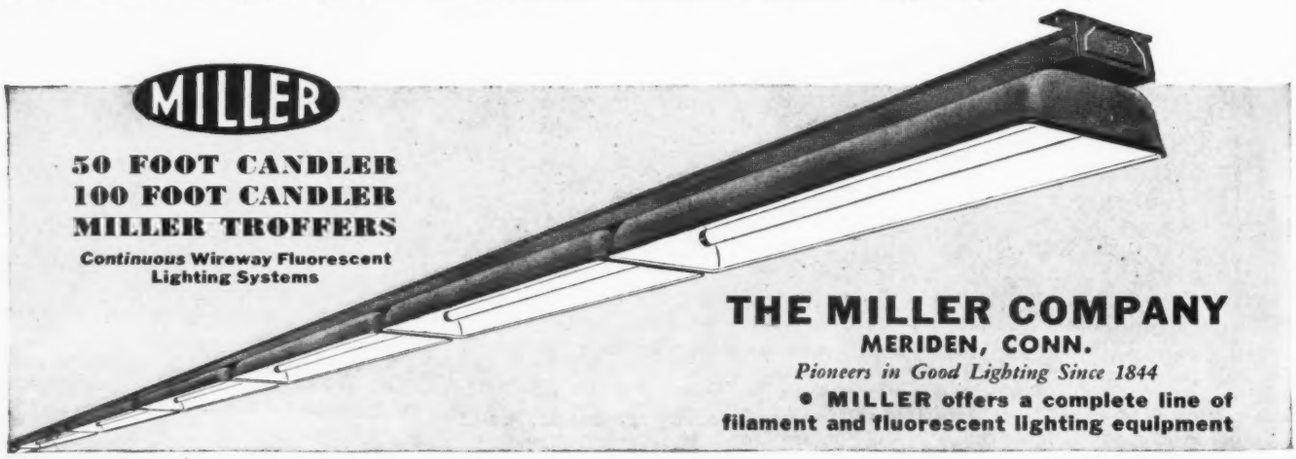
INCREASES . . . ILLUMINATION — Provides 50 foot candles, 100 or higher of working daylight for factory areas, plant offices and drafting rooms. • PRODUCTION—Field facts demonstrate plants using MILLER lighting have increased production efficiency. Figures on request. • FLEXIBILITY—Production layouts can be changed at any time without changing lighting. • WORKER MORALE—Employees feel better and work better with the greater illumination and coolness of this improved lighting.

THERE'S still some confusion on this question of war plant lighting, and we'd like to help clear it up.

For instance, there's talk about substitute materials for reflectors and other parts of fluorescent lighting equipment. Well, frankly, no one knows exactly when they will have to be used. *But of this you can be sure* —MILLER engineers, with 98 years of lighting specialization to their backs, will give you the most efficiently designed *complete* fluorescent lighting system, soundly constructed of the most practical materials available.

Today we have two masters to satisfy, Uncle Sam and you. We're not going to let either of you down.

If yours is a war plant, it's ten to one you're eligible for MILLER 50 FOOT CANDLERS or 100 FOOT CANDLERS for your production areas . . . MILLER TROFFERS for your plant offices and drafting room. No matter what today's conditions are, count on us to help you get better working daylight to speed your war effort . . . if you act promptly. *Wire today for complete information.* (Representatives in principal cities.)

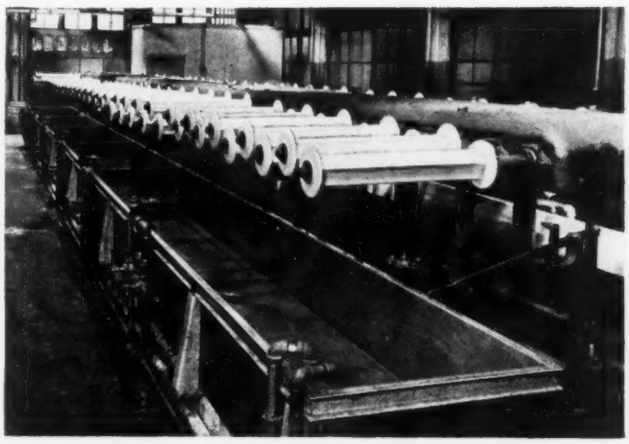

MILLER
50 FOOT CANDLER
100 FOOT CANDLER
MILLER TROFFERS
Continuous Wireway Fluorescent Lighting Systems
THE MILLER COMPANY
MERIDEN, CONN.
Pioneers in Good Lighting Since 1844
• MILLER offers a complete line of filament and fluorescent lighting equipment

WAYS TO CONSERVE STRATEGIC MATERIALS . . . No. 1

Avoid losses due to unnecessary corrosion and abuse by keeping equipment clean

Much of your dyeing and finishing equipment is today irreplaceable. The Monel* and other vital metals of which it is made must accordingly be protected against unnecessary corrosion and abuse.

An important safeguard in this respect is *cleanliness.* The following suggestions are therefore offered as a guide:



1. PREVENT ACCUMULATION OF DEPOSITS in wet processing equipment, particularly above the water level. Such deposits may cause accelerated corrosion. Furthermore, being hard to remove they often necessitate use of scrapers and other tools . . . a procedure which may *easily result in damage* to equipment.

★

2. RINSE OUT EQUIPMENT AND UTENSILS . . . especially after they have been handling corrosive solutions. No metal is *completely immune* to corrosion. And continued contact with residues can and will shorten its life. Therefore, equipment and utensils during use and when idle *should be kept clean.*

Even with the not-too-careful treatment typical of normal times, Monel equipment in the past has proved good for years of service. With better care it will last indefinitely . . . and thus assure the uninterrupted production so essential to the war effort.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

★ ★ ★ ★ ★ **INCO NICKEL ALLOYS** ★ ★ ★ ★ ★

MONEL* • "K" MONEL* • "S" MONEL* • "R" MONEL* • "KR" MONEL* • INCONEL* • "Z" NICKEL* • NICKEL

Sheet . . . Strip . . . Rod . . . Tubing . . . Wire . . . Castings

New Target for Industry:

More Dollars Per Man Per Month in the PAY-ROLL WAR SAVINGS PLAN

TO WIN THIS WAR, more and more billions are needed and needed fast—AT LEAST A BILLION DOLLARS A MONTH IN WAR BOND SALES ALONE!

This means a *minimum* of 10 percent of the gross pay roll invested in War Bonds in every plant, office, firm, and factory in the land.

Best and quickest way to raise this money—and at the same time to "brake" inflation—is by stepping up the Pay-Roll War Savings Plan, having every company offer every worker the chance to buy MORE BONDS.

Truly, in this War of Survival, VICTORY BEGINS AT THE PAY WINDOW.

If your firm has already installed the Pay-Roll War Savings Plan, *now is the time*—

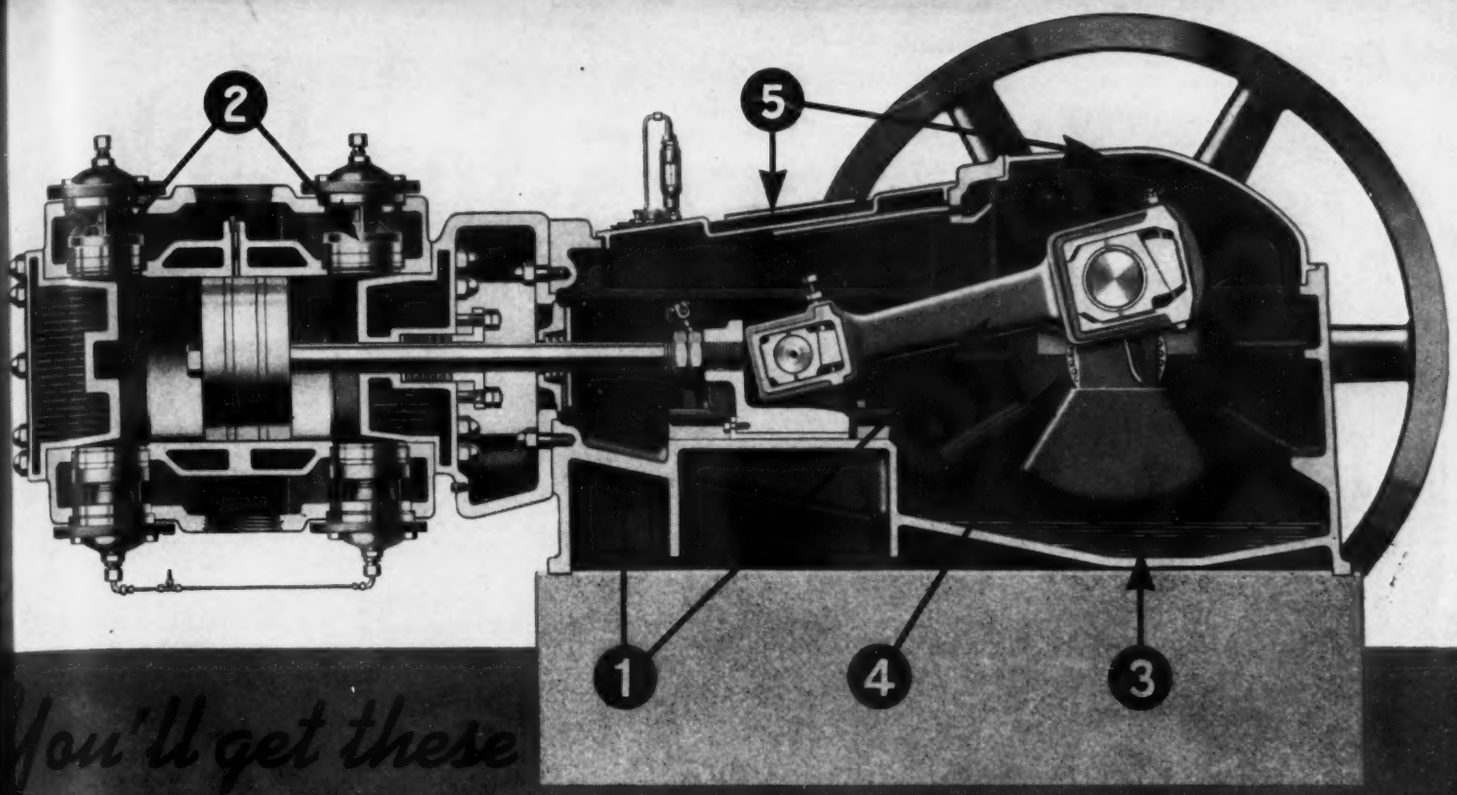
1. To secure wider employee participation.
2. *To encourage employees to increase the amount of their allotments for Bonds, to an average of at least 10 percent of earnings—because "token" payments will not win this war any more than "token" resistance will keep the enemy from our shores, our homes.*

If your firm has not already installed the Pay-Roll War Savings Plan, *now is the time to do so.* For full details, plus samples of result-getting literature and promotional helps, write, wire, or phone: War Savings Staff, Section E, Treasury Department, 709 Twelfth Street NW., Washington, D. C.

U. S. War Savings Bonds

This space is a contribution to America's all-out war program by

TEXTILE WORLD



You'll get these

HEAVY-DUTY *Features*

If you install an INGERSOLL-RAND

"Be sure it's a heavy-duty compressor. We'll need plenty of air 24 hours a day."
"That's right! We're ordering an Ingersoll-Rand Class ES."

Atlanta
Birmingham
Boston
Buffalo
Butte
Chicago
Cincinnati
Cleveland
Dallas
Denver
Detroit
Duluth
El Paso
Hartford
Houston
Kansas City
Knoxville
Los Angeles
Newark
New Orleans
New York
Philadelphia
Picher
Pittsburgh
Pottsville
Salt Lake City
San Francisco
Scranton
Seattle
St. Louis
Tulsa
Washington

class ES compressor

1 **STURDY DESIGN.** The "ES" has a die-forged crankshaft and connecting rod, a double-ring piston, and a heavily-ribbed frame, all of which contribute to trouble-free operation.

2 **HIGH EFFICIENCY CHANNEL VALVES.** Quiet, cushioned Channel Valves are one of the reasons why the Class ES is the most efficient single-stage compressor available today.

3 **AUTOMATIC LUBRICATION** of running gear parts is simple and reliable. The cylinder is lubricated by a controlled force-feed system.

4 **TAPERED ROLLER BEARINGS** operate for long periods without adjustment. They are placed in a double row at each end of the crank, with one complete bearing assembly free floating.

5 **COMPLETE ACCESSIBILITY** is provided by large oil-tight frame covers. These covers are light in weight, and permit quick inspection or adjustment of all running gear parts.

Ingersoll-Rand

11 BROADWAY, NEW YORK CITY

1-135

Branches or Distributors in other Principal cities the world over.

INGERSOLL-RAND ALSO BUILDS THE TOOLS THAT USE THE AIR.

U. S., Soviet Agree | THE WASHINGTON POST: Germans Claim

a 75-ton kick in the panzers!

Confidence is the strong and good cousin of that horrid word complacency. Most Americans are confident, few are complacent today. Confidence is our heritage, bequeathed to us by the pioneers, and nurtured by headlines of industrial marvels.

From the day when the Flatiron Building made news, to the colossal statistics of Grand Coulee, we have become firmly convinced that no task is too great for our vast construction industry.

That conviction is justified. A year before Pearl Harbor Sunday was anything more than a gleam in treacherous oriental eyes, our engineers and contractors were moving earth faster than it had ever been moved before . . . in preparation for projects which since have made our skyscrapers and giant bridges look like mere trial heats.

You know part of the story. We can't tell it all . . . complete aluminum plants built between Christmases . . . whole farms transfigured into bomber plants in less time than elapses between crops of corn . . . great shipyards in operation today on inlets that were frog ponds when the "Battle of Britain" was at its height.

How were these miracles of construction performed?

We can't call it genius. Germany, in particular, has many great engineering minds, yet the entire Axis is outstripped by our capacity to do big jobs fast.

We can't explain it by just calling it skill and experience. The new shipyards prove that . . . our skilled and experienced shipbuilders were absorbed by navy construction long ago. Yet we have met each new quota of cargo shipbuilding. Deep in our hearts we all know industry will meet whatever quota may be needed however impossible that may seem now.

▶ Some of these cargo ships and shipyards are being built by landlubbers . . . by men who knew nothing of the sea, but who were hell on reading blueprints and at designing and operating complicated machines.

There are several reasons why ordinary Americans become Supermen when faced by "fantastic" construction jobs.

▶ The first reason is the intrepid spirit of the management and men of American construction. With a slide rule in his hand, the most meek and stoop-shouldered of American engineers becomes a high adventurer. He is willing to gamble that the machines and men at his command can lick anything this side of the fourth dimension.

The second reason is motive power. The leaders of our construction industry have always had the guts to gamble the cost of big machines to do big jobs. Probably the rest of the world combined cannot match our array of power shovels, scrapers, bulldozers, compressors, welders, motors and engines for moving and moulding earth, water, steel and stone.

The third reason is men. A shovel weighing 75 tons needs a "75-ton mind" at the control levers . . . American labor takes to machinery as a co-ed takes to "swing."

The fourth reason is versatility. The construction industry is used to turning corners at high speed . . . to an organization that has built railroads, cathedrals, bridges, and movie palaces, making a munitions plant in a hurry just means more men, more machines and more night work, and more of that good American ingenuity.

In recognition of the miracle of war production—accomplished through the cooperation of American management and labor with the W. P. B. . . . . this advertisement is published by the McGraw-Hill Network of Industrial Communication.

P.S. The fifth reason is "mobilized information"

Through a distinctively American process, the Industrial Press, trial and error are reduced to a minimum. Information on successful new techniques flows freely from job to job.

If a factory in Kansas succeeds in laying the dust and stopping ruts in its parking lot, an engineer with the job of quick-surfacing a jungle airport reads how it was done in a construction magazine.

If a shipbuilder finds he can cut construction time in half by building hulls upside down, other shipbuilders learn about it from their technical magazines.

At McGraw-Hill alone 153 editors and 725 field-correspondents are constantly combing construction as well as industrial jobs to find new and faster methods. This "know-how" is then routed through industrial magazines to every industry where it can be helpful.

In addition to the editors, many industrial advertisers keep men in the construction field to watch the performance of their machines. Their reports are used in industrial advertising to show operators how to make machines do more work and last longer in these days of shortages of time and metal.

. . . Now this advertisement contains a moral and "commercial." The commercial objective is obvious. The moral is this:

▶ Let's remember how well government, management and labor are getting along together in the face of visible peril. When the war is all over, we need have no fear of the invisible perils of peace, if we tackle our jobs in the same cooperative spirit.

THE McGRAW-HILL NETWORK

More than 1,000,000 of the executives, designers and production men, who give America her world supremacy in technical "know-how," use the editorial and advertising content of the 23 McGraw-Hill publications as a means of exchanging ideas.

McGRAW-HILL BOOKS

Publishers of technical, engineering and business books for colleges, schools, and for business and industrial use.

McGRAW-HILL PUBLISHING COMPANY, INC.
330 WEST 42nd STREET · NEW YORK

THE McGRAW-HILL NETWORK OF INDUSTRIAL PUBLICATIONS

American Machinist
Aviation
Bus Transportation
Business Week
Chemical & Metallurgical Engineering
Coal Age
Construction Methods
Electrical Contracting
Electrical Merchandising
Electrical West
Electrical World
Electronics
Engineering & Mining Journal
E. & M. J. Metal and Mineral Markets
Engineering News-Record
Factory Management & Maintenance
Food Industries
Mill Supplies
Power
Product Engineering
Textile World
Transit Journal
Wholesaler's Salesman

New GOODALL Products

For CIVILIAN DEFENSE

Developed to meet Goodall's "KNOW HOW" Standards for Quality and Serviceability.

GOODALL "DE-CAM" SUIT

A two-piece olive-green suit of tough, pliable oiled fabric, for use by Decontamination Workers in municipalities and industrial plants. Suit consists of hooded shirt and drawstring pants. Hood fits tightly around face without interfering with gas mask. Shirt has waterproof gusset and snap front. Elastic-tight fit at wrists, snap-tight fit at ankles. GOODALL Rubber Gloves and Boots round out the protective qualities of this reliable war-time outfit.

STIRRUP PUMP HOSE

STYLE L-73. A plastic hose that will resist intense heat and withstand rough handling. Available in ⅜" diameter and in long lengths. A-10 Priority or better required.

Write for complete information and prices, or phone our nearest branch for representative.

Main Office—5 South 36th St., PHILADELPHIA, PA.
Branches—New York, Boston, Pittsburgh, Chicago

Goodall Rubber Co. of Calif. Goodall Rubber Co. of Texas

Factory—Trenton, N. J. (Est. 1870)

"72 Years of Know-How."
—Our Most Valuable Commodity.

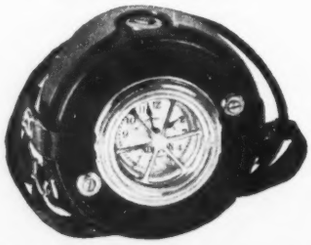
GOODALL

RUBBER COMPANY INCORPORATED

. . . if your Company is engaged in vital War production. In which case you are indeed fortunate, because DETEX controls and regulates the activities of your guards and watchmen, gives you a tamper-proof record of their attention to duty. Consult our experts in planning or expanding your watchmen's routes.

. . . if your Company is still largely a civilian enterprise, in which case your present equipment is priceless. Take good care of it. Your local DETEX representative will lend you emergency equipment while your DETEX Watchclocks undergo overhauling and repairs — with genuine DETEX parts.

Have you received your FREE copy of our manual "PLANT PROTECTION FOR NATIONAL DEFENSE"?



DETEX WATCHCLOCK CORPORATION
Dept. TW-7
Home Office, 76 Varick Street, New York
Sales and Service in All Principal Cities

DETEX

WATCHMENS CLOCKS

NEWMAN ★ ECO ★ ALERT ★ PATROL

Today for VICTORY *Tomorrow for* ECONOMY

Today every ton of IngAclad Stainless-Clad Steel that is rolled is a two-way contribution to Victory.

First—By providing perfect stainless service, it speeds up production in the Chemical, Food, Textile, Dairy and other essential Industries.

Second—By greatly reducing the quantity of vital alloys required to give stainless service, it releases more of the precious metals for other direct war uses.

So today IngAclad is a promise of Victory. Tomorrow, when Peace comes, it will again offer you the promise of those many economies which its pre-war use had already demonstrated to American Industries.

IngAclad is rolled in Sheets 8 to 18 gauge; and in Plates 3/16" and heavier. Regularly supplied clad with 18-8 stainless, but also available in other analyses.

We also produce solid corrosion and heat-resisting alloys.

★ **Users of IngAclad include:**

American Cyanamid Co.
R. D. Cole Mfg. Co., Newnan, Ga.
Dow Chemical Co.
E. I. DuPont de Nemours Co.
Greenville Steel & Foundry Co., Greenville, So. Car.
Graver Tank & Mfg. Co. Inc., E. Chicago, Ind.
Hercules Powder Co.
Holliston Mills, Kingsport, Tenn.
Jeffrey Mfg. Co., Columbus, O.
Leader Iron Works, Decatur, Ill.
Monsanto Chemical Co.
Sayles Finishing Plants, Inc.
Southern Bleachery & Print Works, Taylors, So. Car.

INGERSOLL STEEL & DISC DIVISION
BORG-WARNER CORPORATION
310 South Michigan Avenue • Chicago, Illinois
Plants: Chicago, Ill.; New Castle, Ind.; Kalamazoo, Mich.

"A Borg-Warner Product"

INGACLAD
STAINLESS-CLAD STEEL

Stewart IRON and WIRE FENCES

Stewart Non-Climbable Chain Link Wire Fence offers the utmost in plant protection and is available to concerns prepared to extend high priority ratings. Also available are Stewart Wire Mesh Partitions and Window Guards. When writing for information, please give full details and mention priority rating. Catalog I-42 gives full details and specifications on fence and other protective iron and wire accessories. Stewart maintains sales and erection offices in all principal cities.

THE STEWART IRON WORKS CO., INC. 969 Stewart Block CINCINNATI, OHIO

DAY

NIGHT

Light-proof ROOF VENTILATOR READY FOR BLACKOUT

1. Low height—streamlined appearance.
2. Guaranteed performance independent of wind and gravity.
3. Hinged top gives easy access to motor fan and shutter.

1. No light shows through. Ready for blackout without special treatment.
2. Non-overloading power characteristic assures trouble-free operation.
3. Harmonizes with modern plant design.

DeBothezat

FREE Detailed information on Light-proof Roof Ventilators. *WRITE TODAY.*

VENTILATING EQUIPMENT DIVISION ★ American Machine and Metals, Inc., East Moline, Illinois

Helping Industry Meet the Acid Test

1. ACIDS HOLD A FRONT LINE POST in America's production battle. In munitions factory, metal plant, oil refinery and textile mill . . . acid tanks, pipe lines and heating coils must resist the attack of industrial acids . . . keep them on the job without shut-downs for repairs . . .

2. THAT'S WHY TELLURIUM LEAD is so well-suited for such equipment. This new alloy laughs in the face of hot sulphuric and other acids. A high-temperature lead, it has great resistance to acid corrosion — even at temperatures approaching its melting point. Thus it helps equipment stand up longer — helps keep it on a 24-hour shift . . .

3. EQUALLY IMPORTANT, TELLURIUM LEAD *strengthens under stress* — actually "work-hardens". Tough to start with, it gets *tougher* when hammered, rolled, bent or stretched. Thus joints and turnover points are less subject to cracking . . . buckling and creeping are minimized . . . and resistance is increased to vibration and to fracture from repeated temperature changes . . .

4. TELLURIUM LEAD COMBINES these important new advantages with the well-known properties of St. Joe chemical lead because it is a special alloy of this time-tested metal and Tellurium. Fabricated in sheets, pipes and coils, its use in vital industrial spots is helping Liberty's Arsenal "keep 'em rolling".

NATIONAL LEAD COMPANY—New York, Baltimore, Buffalo, Chicago, Cleveland, Cincinnati, St. Louis; National-Boston Lead Co., Boston; John T. Lewis & Bros. Co., Philadelphia; National Lead & Oil Co. of Penna., Pittsburgh; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis; Master Metals, Inc., Cleveland; The Canada Metal Co., Ltd., Toronto, Montreal, Winnipeg, Vancouver.

TELLURIUM LEAD

• A NATIONAL LEAD COMPANY PRODUCT •

Make your "ON GUARD" Equipment Last Longer

WRIGHT *Improved High-Speed* HOISTS

Too often the hoist that is on stand-by duty—*"on guard"* for instant action in case of emergency—is neglected by the maintenance man. Don't neglect your hoists. Make them last longer by regular and proper maintenance. Here are a few suggestions:

Put the Grease Gun to Work!
A **WRIGHT HOIST** needs thorough lubrication once a month. Keep the load chain well-lubricated, too.

Don't Overload Your Hoist.
While **WRIGHTS** are famous for their ability to stand abuse, this is no time to abuse machinery. Overloading results in a stretched chain which cannot seat itself properly in sheave pockets, thus accelerating wear.

Watch the Load Hook.
WRIGHT hooks, drop-forged from special steel, give visible warning of overloading by slowly opening. Don't continue to use hooks that have stretched.

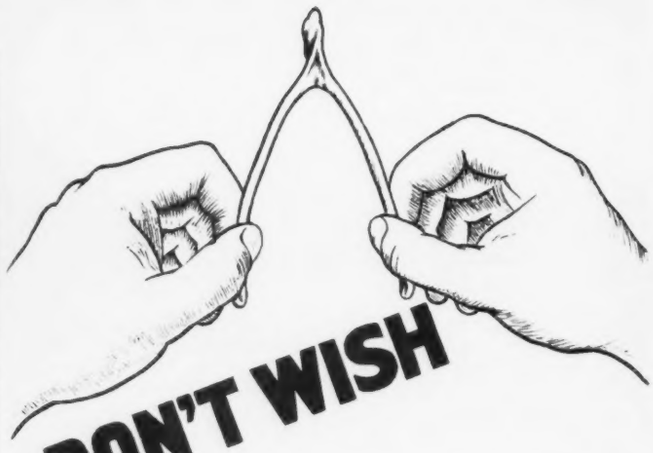
Inspect Your Hoists Regularly.
Where properly maintained, **WRIGHT HOISTS** have given continuous, trouble-free service for 20 to 25 years. Just to summarize—remember—

1. **Don't forget the grease gun**
2. **Don't overload your hoists**
3. **Watch the load hook**
4. **Inspect your hoists regularly**

WRIGHT MANUFACTURING DIVISION
York, Pa., Chicago, San Francisco, New York

In Business for Your Safety

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT



DON'T WISH

for better carding— make sure of it with BOOTH

QUALITY CARD CLOTHING
50 YEARS OF SERVICE

Benjamin Booth Company
ALLEGHENY AVENUE and JANNEY STREET • PHILADELPHIA, PA.

Machine and Hand Knitting

Yarns

[French-Bradford]

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

★

Complete color assortments

American Woolen Company

225 Fourth Avenue New York

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Let us help you *speed* war production

ALTHOUGH our stocks of steel are not what we wish they were, what we have can be yours in a hurry—subject, of course, to priority restrictions. If we don't have what you need, we will do everything possible to help you find a source of supply. Our first job, like yours, is to do everything we can to speed production that will help win the war.

"Scully Service" is on the job—in all of our eight conveniently located warehouses—day and night. Try Scully—see our phone numbers at left. Cut out the number of the warehouse nearest you and paste it in a handy spot.

IN STOCK!
DARDELET "RIVET-BOLTS"

We can offer immediate shipment of both Dardelet "RIVET-BOLTS" and Dardelet Machine Bolts. These bolts save valuable time and labor and assure permanently tight joints.

The Dardelet "RIVET-BOLT" is a ribbed bolt with Dardelet self-locking thread, and is widely used for field erection of structural steel. Has recessed nut. Bolt is driven in and nut is applied with wrench. Economical and strong.

The Machine Bolt with Dardelet self-locking thread is for general use where vibration is present.

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SCULLY STEEL PRODUCTS COMPANY

Distributors of Steel and Steel Products

Warehouses at CHICAGO · NEWARK, N. J. · ST. LOUIS · BOSTON
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UNITED STATES STEEL

For 69 years DEPENDABLE

Under today's urgent production conditions, it is well to pin your faith on rings with a long-standing reputation for easy starting and for the even wearing-in essential to maximum life. The famous DIAMOND FINISH trademark denotes rings of surpassing excellence. Their surface is super-smooth. Their special analysis steel is extra hard, and possesses a structural uniformity that guarantees even wear during extra long life. You can DEPEND upon DIAMOND FINISH rings to keep your machinery at Peak Production!

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SPINNING DIAMOND FINISH **RING CO.**

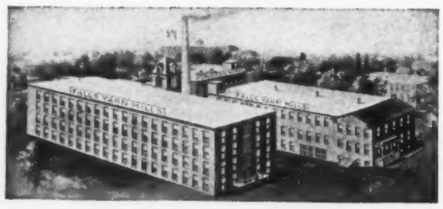
Makers of Spinning and Twister Rings since 1873

Southern Representative H. ROSS BROCK, 3 Vannoy St., Greenville, S. C. Tel. 2824

FALLS YARN MILLS

WOONSOCKET, R. I.

Incorporated 1904



Fine Woolen and Specialty Yarns For Weaving and Knitting

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RAYON TOPS

Standard Grades—Lustrous—Delustred—Superfine

Rayon Noils . . Staple Fibre

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COTTON WARPS

Cotton Yarn and Warps . . Single or Ply . . White or Colored . . Carded . . Combed

Novelty yarns—of cotton, worsted, wool, mohair, rayon — in all fashionable combinations and effects and in many original effects. Write for samples.

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OSCAR HEINEMAN CORPORATION

PROCESSING

Rayon and Nylon Yarns

for Hosiery Knitting Trade

We specialize on high twist rayon processed with "AVCONIT No. 1" for full fashioned hosiery.

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THOS. WOLSTENHOLME SONS & CO. INC.

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Yarns for all purposes

French and English Spun Worsted
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Think Talk Advertise Sell

Cotton Freshness

the new *basic* selling appeal for Cottons featured every month in the National Advertising Campaign of 12,000,000 cotton farmers and the American Cotton Industry.

FOR **AUGUST**

A page advertisement in July 25th issue, *Saturday Evening Post*, will talk this basic selling theme for you in

MEN'S FURNISHINGS

NATIONAL COTTON COUNCIL OF AMERICA—COTTON TEXTILE INSTITUTE

Stop Oil Raids On Loom Production

Dripping, leaking oil cuts down your Weave Room production of perfect goods. Oil spots on goods increase cost because extra labor is required for removal.

NON-FLUID OIL is drip-less and waste-less. It stays off goods and insures high production at low cost by keeping machines running steadily at top speed. NON-FLUID OIL outlasts oil so reduces lubricant cost.

Write for instructive bulletin

New York & New Jersey Lubricant Co.

Main Office: 292 Madison Ave., New York, N. Y.

Southern Agent, Falls L. Thomason, Charlotte, N. C.

WAREHOUSES

Chicago, Ill. — Providence, R. I. — St. Louis, Mo. — Detroit, Mich. — Atlanta, Ga. — Charlotte, N. C. — Greenville, S. C.

TRADE MARK REGISTERED

NON-FLUID OIL

IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

THE OLDEST AND LARGEST
MANUFACTURER OF
Ring Spinning and Twister Travelers

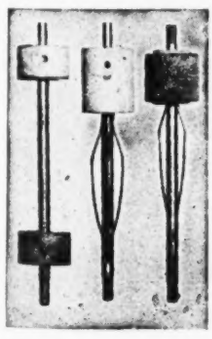
NATIONAL RING TRAVELER CO. PROV. R.I. U.S.A. WENTWORTH GRAVITY TRAVELERS

In the UNITED STATES
American • Hicks • Wilson
United States Standard
Wentworth Double Duty and Gravity Travelers

MAKE STRONGER YARN
National-Etartnep Finish
A New Chemical Treatment

Write Us

National Ring Traveler Company
354 Pine St., Pawtucket, R. I.
PHILIP C. WENTWORTH, *Treas.*
P.O. Box 1565. Providence, R. I. Charlotte, N. C.



Save Money with "WAYNE" Winder and Redraw Spindles

Hard fibre tips for all types of spindles—require no oiling—renewable at little cost. Use them for cleaner yarn and better wound bobbins. Write for sample of these and other Wayne money-saving textile machine parts and supplies.

Spindles of all types. Wood, head, steel head, cork covered heads and hard fibre or hardened steel top spindles. Let us send you a sample of the type you prefer. Save money by buying from Wayne.

WAYNE MANUFACTURING CO.
HONESDALE, PA.

RHODE ISLAND SCHOOL OF DESIGN

TEXTILE SCHOOL

• Provides ambitious young men and women with technical and practical training in the design, construction, and manufacture of yarns and fabrics. Courses include Principles of Production, Management, Economics, Costing, Marketing, and Industrial Psychology.

Four-year course leads to B.S. in Textile Engineering. Majors in yarn and cloth manufacturing, or chemistry and dyeing. Four year diploma course in clothing design.

Also wartime courses in all fields

Complete equipment — including power machinery of commercial proportions — for the manufacture of yarn and cloth from the raw materials to the finished product.

Effective placement service—unusual opportunities open to graduates. *Send for catalog.*

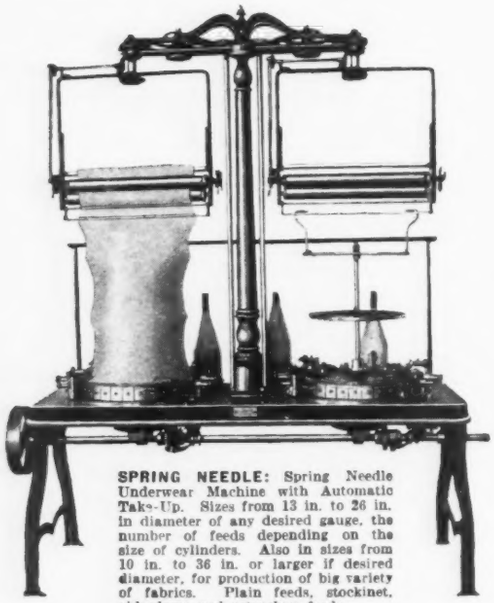
8 College St.
Providence, R. I.

Photo by Finkels, Graphic Arts Department

CRANE

KNITTING MACHINES

meet the need for Speed—
for Quality and Low Cost



SPRING NEEDLE: Spring Needle Underwear Machine with Automatic Take-Up. Sizes from 13 in. to 26 in. in diameter of any desired gauge, the number of feeds depending on the size of cylinders. Also in sizes from 10 in. to 36 in. or larger if desired diameter, for production of big variety of fabrics. Plain feeds, stockinet, elderdown and astrachan feeds.

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are Patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why
—and how . . . just ***WRITE***

CRANE Improved Automatic
3 Colored

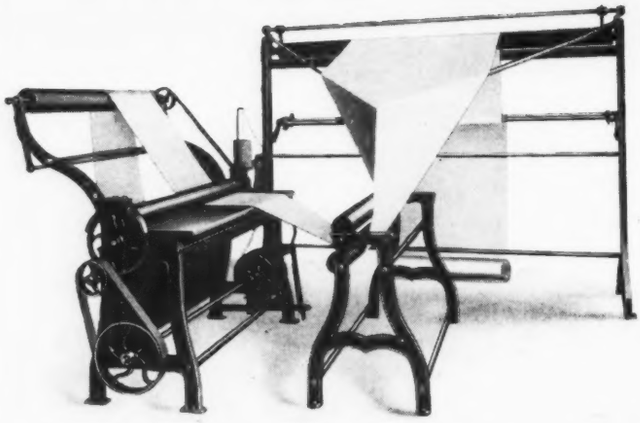
Improved Automatic 3 Colored Plain Stripes. Made in sizes from 7⅝ in. to 20⅝ in. inclusive, of any desired gauge. Measurements are back to back of cylinder needles. Knit fabrics for bathing suits, theatricals, athletic goods. Crawford stop motion applied when requested.

1870 **CRANE** 1942

MANUFACTURING CO.
LAKEPORT, N. H.

Spring Latch Needle

KNITTING MACHINERY



No. 27—IMPROVED DOUBLING AND TACKING MACHINE

Sewing any length stitch up to 1¼ in., making a firm, strong stitch for any weight or width of goods. This machine is equipped with our latest oscillating needle bar sewing head, which makes it the fastest tacking machine on the market for tacking the selvages of woolen and worsted fabrics. For further information, send for our catalog.

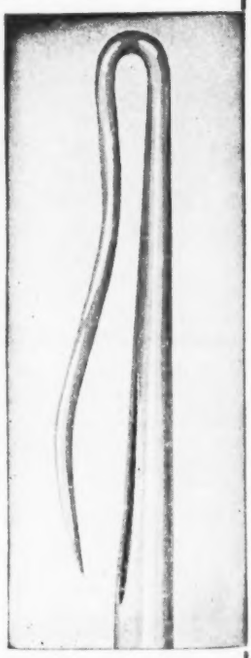
DINSMORE MFG. CO.

SALEM, MASS.

CHARLES COOPER CO., INC.
Bennington, Vermont

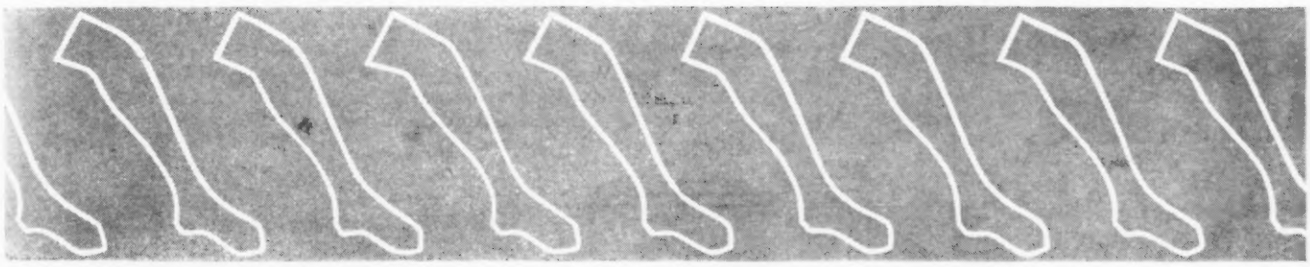
Manufacturers of
Quality LATCH and SPRING-BEARD

NEEDLES



also
Manufacturers of **THE FAMOUS COOPER CIRCULAR SPRING-NEEDLE RIB KNITTING MACHINES**

The WILDMAN Way



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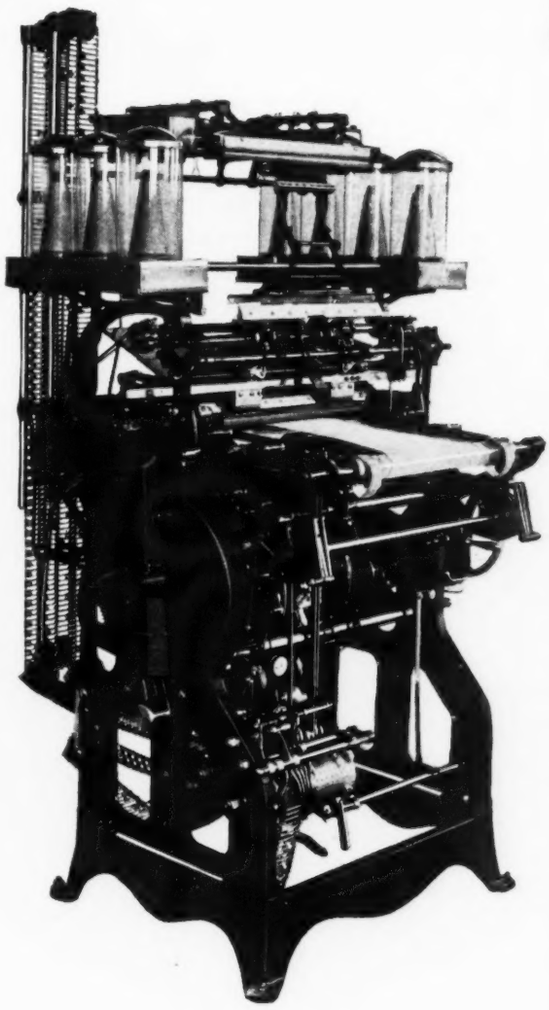


OPERATION • • PRODUCTION

These are no days for "stop and start" production. Labor minutes are too precious to tolerate any longer the lost motion, lost time and lost production of multiple-section machines—that's why the trend of stocking manufacturers is to the WILDMAN Single-Head, Single-Unit Full-Fashioned Hosiery Machine which knits the complete stocking in one continuous operation, uniformly perfect from top to toe. No stops, no slowing down, no bad matching of leggers and footers. Easy to install, easy to operate—the ideal machine for these super-production times.

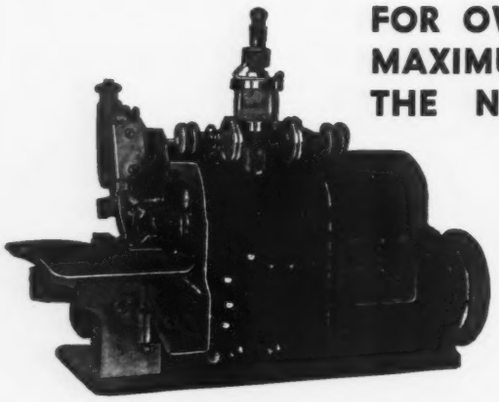
Write for complete information.

WILDMAN MFG. CO., NORRISTOWN, PA.

WILDMAN

Single-head, single-unit full-fashioned hosiery machine

Established 1838 **MERROW** **Incorporated 1894**



FOR OVERSEAMING AND OVEREDGING WITH MAXIMUM EFFICIENCY — MODERNIZE WITH THE NEW MERROW CLASS A MACHINES

The result of several generations of specialized effort in the industrial sewing machine field—combining quality production with high speed and low operating cost to a greater degree than ever before.

WRITE FOR DETAILS AND LET US DEMONSTRATE THESE MACHINES ON YOUR OWN FABRICS.

ALSO PLAIN CROCHET AND SHELL STITCH MODELS FOR ORNAMENTAL EDGE FINISHING AND CLASS 60 MACHINES FOR BUTT SEAMING

200 VARIETIES FOR 200 PURPOSES

THE MERROW MACHINE COMPANY

Starting Its Second Century

2803 LAUREL STREET HARTFORD, CONN., U. S. A.

TOMPKINS

CIRCULAR SPRING NEEDLE

KNITTING MACHINES

FOR PRODUCING

UNDERWEAR	OVERCOATS
SWEATERS	TERRY CLOTH
SWEAT SHIRTS	STRIPED CLOTH
DRESS CLOTH	PATTERNS

RUBBER LAY-IN FABRICS

CIRCULAR LATCH NEEDLE

KNITTING MACHINES

FOR PRODUCING

TOQUES	SCARFS
PARKAS	SHAKER CAPS

TOMPKINS BROS. CO.

SINCE 1846 SYRACUSE, N. Y.

Acme Products

for seamless hosiery knitting

Speak for themselves

Up-To-Date Machines

Needles

Economy Makers

ACME KNITTING MACHINE & NEEDLE CO.

FRANKLIN, N. H.

HOW OAKITE CLEANING HELPS MILLS ECONOMIZE ON MAINTENANCE!

FOR EXAMPLE:

KNITTING MACHINE HEADS NOW CLEANED QUICKLY, EASILY!

More and more mills are cleaning knitting machine heads the Oakite way. Why? For these FIVE reasons: (1) it does the job in HALF the time usually required by manual methods, (2) it eliminates need of brushing or wiping with flammable solvents, (3) it is SAFE, (4) it provides superior results, (5) it is economical.

Try this performance-proved method and see for yourself what it does, how it works, the savings it makes! NEW DIGEST gives details; also contains money-saving tips and work-saving short cuts on 38 other essential mill maintenance jobs. Write for your FREE copy today!

OAKITE PRODUCTS, INC., 42 Thames Street, New York, N. Y.
Representatives in All Principal Cities of the U. S. and Canada

OAKITE Specialized **CLEANING**
MATERIALS METHODS SERVICE — FOR EVERY CLEANING REQUIREMENT

RALPH E. LOPER CO.

INDUSTRIAL ENGINEERS

GREENVILLE, S. C. — FALL RIVER, MASS.

SPECIALIZING IN TEXTILE COSTS AND OPERATING METHODS FOR MORE THAN A QUARTER OF A CENTURY

- COST SYSTEMS
- WORK LOAD STUDIES
- PAY ROLL CONTROLS
- COST REDUCTION SURVEYS
- SPECIAL REPORTS

THE LOYAL T. **IVES** COMPANY EST. 1874

SPRING BEARD KNITTING NEEDLES

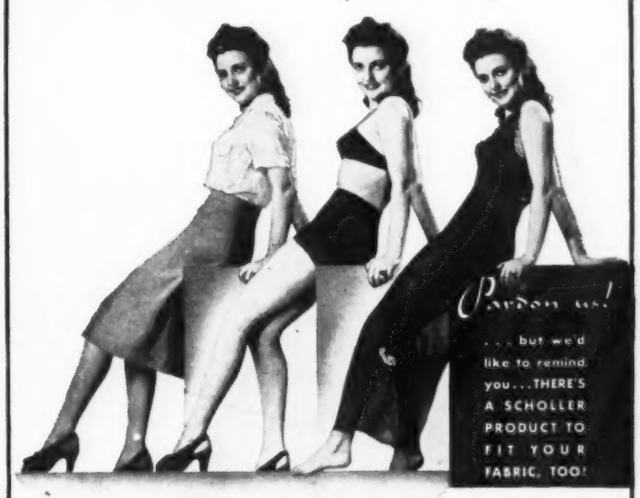
For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines; Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY

Scollerized FROM HEAD TO TOE

from Fibre to finished Fabric . . .



For over 35 years much of milady's apparel has been processed with chemical compounds produced by Scholler. From head to toe — hosiery, gloves, blouses, skirts and underthings — all have been enriched in beauty and added-to in wearability.

And, for every Fibre available today, there is a Dura Beau* *Finish* to give it added beauty and miles more wear . . . all: "Tailored to fit the Fabric."

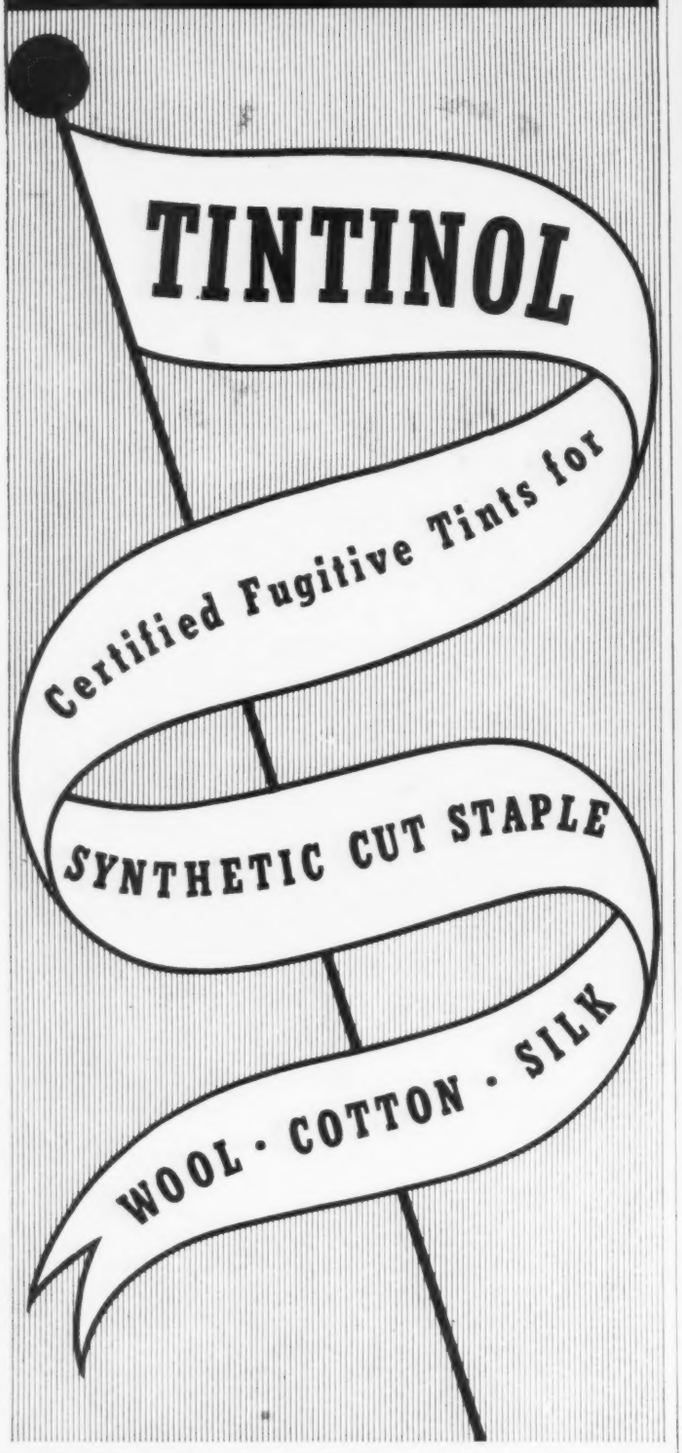
*Reg. U. S. A. and Canada

SCHOLLER BROS.

INCORPORATED

Mfrs. of Textile Soaps, Softeners, Oils, Finishes · Collins and Westmoreland Sts., Phila., Pa. · St. Catharines, Ontario, Canada.

"THEY ARE ALL FUGITIVE"



BORNE SCRYMSER COMPANY

ESTABLISHED 1874

SOUTHERN SALES MANAGER • H. L. SIEVER, CHARLOTTE, N. C.

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F. L. EKSTRAND, STAFFORD SPRINGS, CONN.

ELIZABETH N.J. CHARLOTTE N.

FULLITIN

1. Used in place of soap for fulling, it eliminates the lengthy soap boiling operation.
2. Used with soap, it prevents congealing, eliminating stuck places, creases and whiplashes.
3. Permitting the use of stone cold soap, it prevents the troubles that hot soap causes.

Sample on request

ERNST BISCHOFF CO., Inc.
IVORYTON — CONN.

STANDARD SILICATES

KIER BOILING

For better whites and level results, use a pound of STANDARD Grade 40 Silicate with each 3 to 5 lbs. of caustic in your kier boiling formula. Troublesome stains are eliminated and scarce chlorine is saved.

Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

ALKALI

DIAMOND
ALKALI COMPANY
STANDARD SILICATE DIVISION
GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA
Plants at CINCINNATI · JERSEY CITY · LOCKPORT, N. Y.
MARSEILLES, ILL. · DALLAS, TEXAS

Beat Your Production Schedule

and protect your reputation for present and post-war markets.

These two Laurel Emulsions are widely used to restore normal moisture, soften and lubricate cotton yarn, both for knitter and weaver.

Easily applied from conditioning attachments on winders, the use of Laurel HYDROCOP and 3B SOFTENER gives better running yarn in all succeeding operations.

Laurel

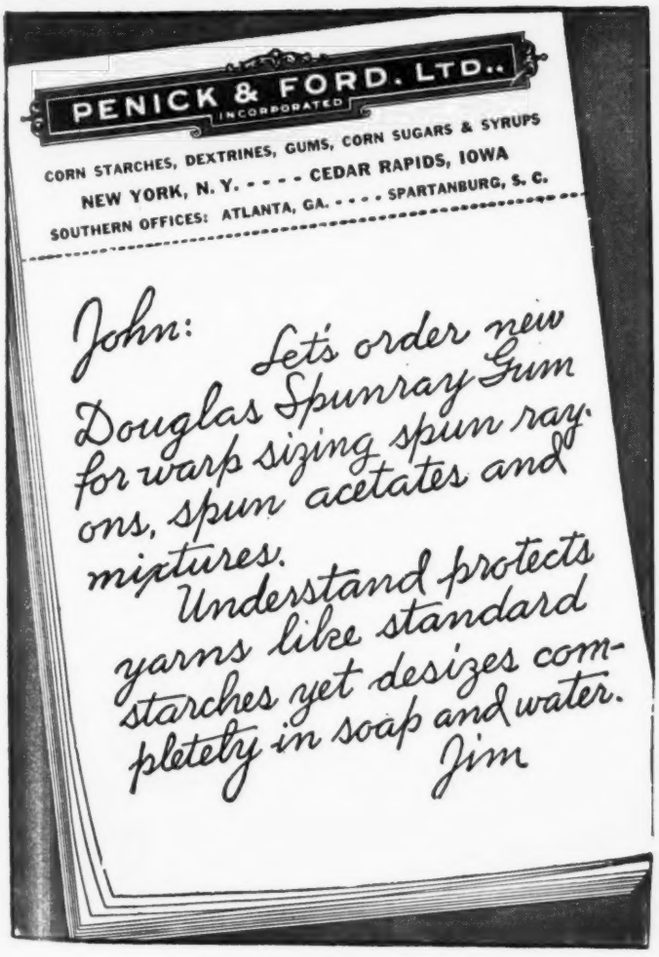
Send for trial order and formula to fit your process.

SOAP MANUFACTURING CO., INC.
SOAPS • OILS • FINISHES

Wm. H. Bertolet's Sons — Established 1909
2606 E. Tioga Street — Philadelphia, Pa.
Warehouses: Paterson, N. J. Chattanooga, Tenn. Charlotte, N. C.

PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS
NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA
SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.


John: Let's order new Douglas Spunray Gum for warp sizing spun rayons, spun acetates and mixtures.
Understand protects yarns like standard starches yet desizes completely in soap and water.
Jim

ONYX

Many processors and finishers of textiles working on government orders are depending on Onyx products and Onyx chemists and technicians to meet specification and production demands. Rapidly changing conditions in all of the raw material fields make very necessary the closest cooperation between Onyx technicians and the textile plants to keep production going. Mills and finishing plants are urged to consult with us on their processing and finishing problems. Onyx research and production facilities are at your service. We are helping others, perhaps we can help you. Your inquiries are solicited.

ONYX OIL & CHEMICAL CO.
JERSEY CITY, N. J.

New England Office:
511 Westminster Street, Providence, R. I.
Charlotte Office:
121 East Third Street, Charlotte, N. C.
Mid-Western Representatives:
Maher Color & Chemical Co.,
Chicago, Ill.; Los Angeles, Calif.
In Canada: Onyx Oil & Chemical Co., Ltd.,
Montreal, P. Q.; Toronto, Ont.

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MILL STARCH

The Weaver's Friend

- Always Uniform
- Dependable
- Carries Weight Into the Fabric
- Penetrates Thoroughly
- Boils Thin

Distributed by
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CHARLOTTE, N. C.

The Keever Starch Company, Columbus, Ohio

RAPIDASE

THE PREFERRED DE-SIZING AGENT

for cottons, rayons and mixed goods

For your de-sizing problems—our technical men are at your service . . . Write or 'phone.

WALLERSTEIN COMPANY, INC.
180 MADISON AVENUE, NEW YORK

ROME SOAP MFG. CO.

WRITE US FOR SAMPLES AND QUOTATIONS

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

D. R. KENYON & SON
RARITAN, N. J.

TENTERING and DRYING MACHINERY

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:

10 cents a word, minimum charge $2.00.

(See ¶ on Box Numbers.)

POSITIONS WANTED (full or part-time salaried employment only), ½ above rates.

PROPOSALS, 50 cents a line an insertion.

INFORMATION:

BOX NUMBERS in care of any of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH:

The advertising rate is $5.75 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. T.W

NEW ADVERTISEMENTS received by 10 A. M. July 30 will appear in the August issue, subject to limitations of space available.

Over Forty Years of Dependable and Confidential

EMPLOYMENT SERVICE

for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.

Phone: Liberty 6547 — 294 Washington Street, Boston, Mass.

FOR SALE

100 *M* 8" Wool Filling Bobbins. Price and samples on request.

FS-150, Textile World
330 West 42nd St., New York City

Parkhurst 40 in. duplex Burr Picker.
Modern 48 in. Harwood Feed.
Sargent Cone Duster Iron Frame.
Payne Winders & Bobbins.
Tolhurst 40 in. **Extractor.**
TOMPKINS KNITTING TABLES.

EXTRA-CYLINDERS
(Both Spring & Latch Needles)
KNITTING PARTS
BURR-WHEELS
(All makes & Gauges)

Davis & Furber 80 inch NAPPER.
McCreary 4 roll **Steam Calender.**
Bruce Power **Die Cutting Machine.**
Stafford & Holt "TERRYCLOTH" Knitters
Knitting Machines.—All Kinds

SARGENT STOCK DRYER

Geo. E. Smith Textile Machinery Co.
P. O. BOX 46 — COHOES, N. Y.

FOR SALE

Two 15 Ft. 8" Jacquard Label Looms also Royle Card Cutter—Repeater and 400 Lacer

FS-161, Textile World
330 West 42nd St., New York City

3—J&B 2" gauge, 312 spindle Mules
1—Columbia-Green Single Acting Napper
2—I.B.M. Electric Time Clocks
Reeds & Harness Frames, 90" wide
New oil switches, recording wattmeter
Stock Dye Kettles, Pulleys, Shafting, Etc.

WOOL WASTE AND SHODDY

HUDSON RIVER WOOLEN MILLS
420 Madison Avenue — New York City

WANTED

50 braiders. 3 or 5 and 20 carriers New England butt type. Must be in first class running condition. Quote Best price.

W-149, Textile World
330 West 42nd St., New York City

1—60" Card Floor Grinder
1—36" C & M Mixing Picker
4—Gangs #50 Universal winders.
3—three cylinder 30" x 60" garnetts.
6—60" Bramwell self feeds.
1—72" Tolhurst Extractor.
1—Volger Steam Press.
Condensers—Blowers.

H. B. LINCOLN Jr.
P. O. Box #11 — Swarthmore, Pa.

WANTED

WOOL SCOURING MACHINES FOR RAW STOCK

NORMAN M. McDOWELL
Associates
342 E. 142nd ST. — BRONX, N. Y.
Melrose 5-1772

WANTED

High Speed Warper complete with creels and stop motion for beaming warps from dyed packages or cones. Must be in first class condition.

W-160, Textile World
330 West 42nd St., New York City

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10,000 lbs. Pearl Soap #36553

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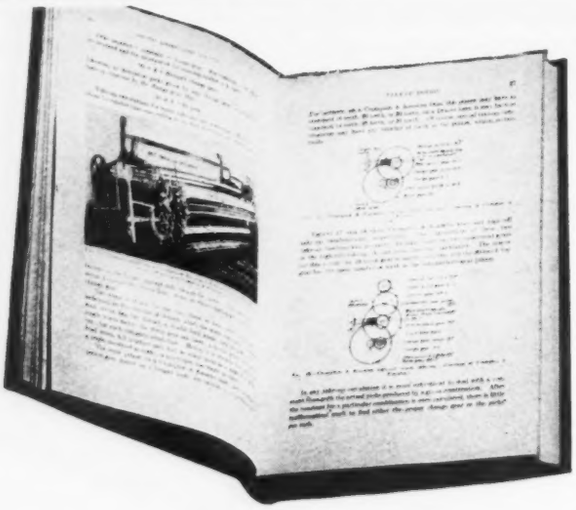

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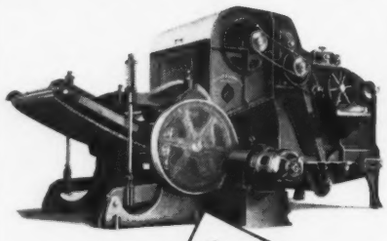

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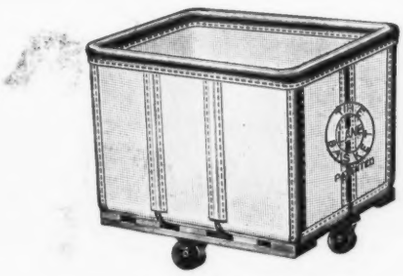

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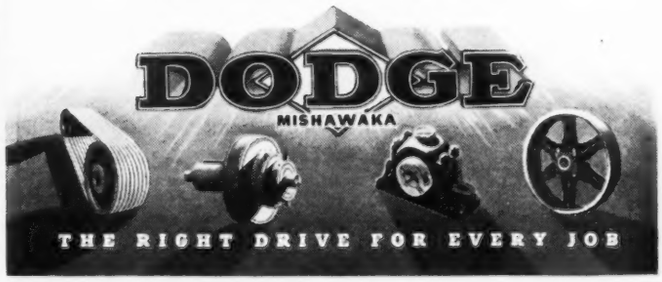

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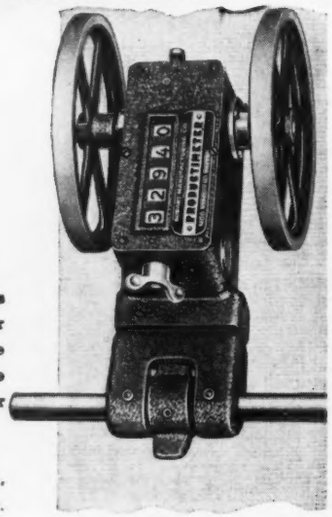

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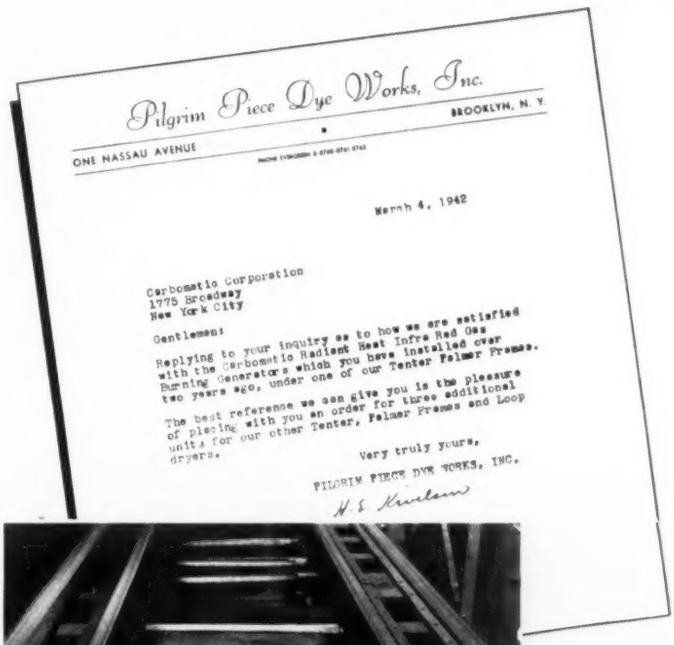

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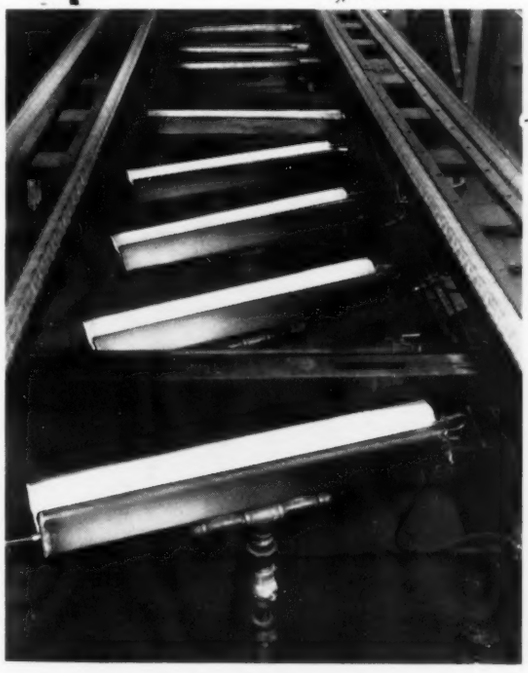

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"AGREED, BUT A FIRM THAT SPECIALIZES IN TEXTILE SOAPS OFFERS TAILOR-MADE PRODUCTS FOR YOUR FABRICS"

You're both right! Just combine your two statements and you have the Beach Soap Company . . . BIG — with a good distributor near you . . . SPECIALIZED — in superior soaps for textile needs.

Many men leave no stone unturned to get the best . . . others — who would like the best — accept the goods most easy to obtain. But — when the best is at your fingertips — well . . . that's another story!

With your order of Beach Soap from a near-by distributor . . . you buy 114 years of active service in the textile industry. Years crowded with improvements . . . suggested by you . . . developed in our laboratories. It sounds reasonable — doesn't it — that after concentrating for this length of time on soaps for men like you — not women with "dishpan hands" — we should know a great deal about the kinds of soap that will serve you best.

Once you try some you'll know what we mean when we say — you can expect a *plus* value when you order Beach Soaps. Beach Soap Company, Lawrence, Mass.

For Wool Scouring

Bescour Flakes or Solid (10° titre)

Fultex

For Fulling

Beach Pure Palm Flakes or Solid

Palm "A" Flakes or Solid (a blended Palm Soap)

Blue Label Flakes (a pure tallow soap)

Red Label Flakes (a 39° titre soap)

For Rayon

Likol Flakes or Solid (22° titre)

BEACH

SOAP COMPANY

Largest Manufacturer SPECIALIZING in Industrial Soaps